

Partnerships for Environmental Public Health

Strengthening a Dynamic Environmental Public Health Network for Tomorrow: Advancing science through critical reflection

Project Descriptions

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2011 Community Assessment Project

Key Personnel (Point of Contact) and Institution:

Marie Lynn Miranda, Ph.D., Children's Environmental Health Initiative Pamela Maxson, Ph.D., Children's Environmental Health Initiative

Brief Description:

The Community Assessment Project was designed and conducted to elucidate the relationship between built environment variables and environmental, public, and clinical health data for the city of Durham, North Carolina. The project was also intended to be used as an easily-adaptable neighborhood assessment tool for researchers and community partners interested in the built environment.

Key Successes/Outcomes:

Measures of the built environment, including housing damage, property disorder, public nuisances, and security measures, were developed and mapped. This information is to be disseminated via community outreach targeting local stakeholders. Longitudinal data will also be used to model neighborhood change and the built environment's relationship with a variety of public health outcomes.

Materials/Products Title	Format (Brochure, Factsheet, DVD/Video, Website, etc.)	Willing to share?	Product in the PEPH Resource Center?
2011 Community Assessment Project Report	Report	YES	NO
CAP Interactive Community Maps	Website	YES	NO

PEPH Program(s):

Centers for Children's Environmental Health & Disease

African Americans and Environmental Cancers: Sharing Histories to Build Trust

Key Personnel (Point of Contact) and Institution:

Della McKinnon, Children's Environmental Health Initiative, Duke University

Partners/Key Personnel and Institutions:

Children's Environmental Health Initiative, Duke University and Triangle Chapter of the Sisters Network, Inc.

Brief Description:

This project is a collaborative effort between the Triangle Sisters Network and Duke University to address community concerns regarding environmental contributors to cancer health disparities among high-risk African-American women and their families. The goals of this project are to foster long-term relationships and build trust between research scientists, the health care system, and the high-risk African American community through dialogue and shared decision making; to advance the field of risk communication through development of culturally-appropriate outreach strategies; to increase awareness of cancer risks and preventive measures; to minimize the barriers to participation in early detection services; and to reduce cancer mortality in African Americans.

PEPH Program(s):

Breast Cancer and Environment Research Program

Air Pollution Outreach, Education, and Research Capacity Building in Alaska Native Villages

Key Personnel (Point of Contact) and Institution:

Tony Ward, Ph.D., The University of Montana, Missoula, MT

Brief Description:

The overall mission of this project is to reduce health disparities of Alaska Native people living in remote communities by raising awareness of indoor air quality issues affecting respiratory health, and to empower students and environmental health personnel residing in these areas to work with their communities to improve air quality, and the health of community members. This project aims to accomplish these outcomes by: 1) educating students on the importance of good air quality and respiratory health outcomes, while providing hands-on research opportunities for students to assess indoor levels of PM2.5 and 2) identifying community specific air pollution issues of interest and characterizing respiratory disease in children. To date, four local Community Coordinators have been hired to provide on the ground assistance with project activities, while four additional hires for these positions are currently in progress. The results from this project will be presented back to each community and used to secure additional funding, responsive to the identified environmental public health needs.

Key Successes/Outcomes:

- Developed culturally and regionally appropriate lesson plans and curricula focused on air pollution and respiratory health.
- Established relationships with Tribal and community members, and school personnel.
- Engaged Tribal and community members, and school personnel in education and research activities.
- Implemented the Air Toxics Under the North Star program within eight remote/rural Alaskan Native communities.
- Educated students on the importance of good indoor air quality and related respiratory health outcomes.
- Hosted two annual teacher training workshops, preparing teachers to effectively deliver the Air Toxics curriculum within their classrooms.
- Hired and provided environmental training to local Community Coordinators in remote/rural Alaska Native Communities.
- Increased student experiences with communicating scientific findings to the general public, peers, and active researchers through participation in local/regional culminating events and community health fairs.
- Increased knowledge and awareness of indoor air quality issues and related respiratory health outcomes among students, teachers, and Tribal and community members.
- Identified environmental health concerns of importance to community members, and rates of respiratory disease in children.

Materials/Products Title	Format (Brochure, Factsheet,	Willing to share?	Product in the PEPH
	DVD/Video, Website, etc.)		Resource Center?
Air Toxics Under the North Star Curriculum -	Lesson Plans / Curriculum	Yes	No
High School	Binder		
Air Toxics Under the North Star Curriculum -	Lesson Plans / Curriculum	Yes	No
Middle School	Binder		
DustTrak 8530 Training Videos	DVD/Video, YouTube	Yes	No

PEPH Program(s):

ARRA Challenge Grant

Assessing and Addressing Exposures to Soil Contaminants Related to Urban Gardening

Key Personnel (Point of Contact) and Institution:

Murray McBride, Cornell University Hannah Shayler, Cornell University

Partners/Key Personnel and Institutions:

Gretchen Ferenz, Cornell University Cooperative Extension -NYC Henry Spliethoff, New York State Department of Health Lydia Marquez-Bravo, New York State Department of Health Edie Stone, Greenthumb, NYC Department of Parks and Recreation

Brief Description:

Urban community gardens can provide affordable, locally grown, healthy foods and many other benefits associated with urban green space, opportunities for recreation and community building activities, and reduced environmental impacts of food transport and large-scale production. However, garden soils (and urban soils in particular) can contain contaminants that may pose risks to human health, and the nature and extent of contamination in many areas remain poorly defined. In addition to this knowledge gap, gardeners and other community stakeholders have identified a need for support in considering risks associated with soil contamination and implementing strategies to reduce those risks. To help fulfill these needs, a new community-research partnership was formed to include team members from Cornell University, Cornell Cooperative Extension, the New York State Department of Health, the community gardening organization GreenThumb, and other stakeholders with interests in community gardening. This partnership aims to address community concerns through collaborative research to inform the development of education and public health action strategies.

Key project activities include: (1) Assessing soil and vegetable contaminant levels (and other properties) and human exposures through activities in urban community gardens, and evaluating the effectiveness of management strategies to mitigate associated potential health risks; (2) Translating research findings into effective education and public health action strategies to reduce exposures to soil contaminants and potential risks; (3) Identifying future research needs related to potential exposures and risks for urban gardeners; and (4) Evaluating the success of education and outreach programs in addressing community concerns and reducing exposures to soil contaminants related to urban gardening activities.

Key Successes/Outcomes:

- Soil sample collection, analysis and written reporting for metals (75 gardens, 875 samples) and PAHs, black carbon and nitrogen (21 gardens, 69 samples)
- Analysis of soil and compost being provided to gardens by NYC DPR Greenthumb indicated low levels of all elements of concern.

- Multiple information sessions with gardeners to answer questions, discuss sampling results and "best practices." Followup survey data indicated that most gardeners found the information sessions "very helpful".
- Another survey indicated that gardens (particularly those with higher contaminant levels)
 implemented exposure reduction measures based on our results communication and guidance.
- Gardens with the highest metals levels received extra deliveries of new soil from NYC DPR
 Greenthumb
- Over half of the gardens from the first phase of sampling that never received soil amendments from NYC DPR Greenthumb prior to sampling signed up to receive these materials in the year following sampling.
- Several farmer-field-school sessions with Brooklyn gardeners to develop and implement appropriate strategies for healthy gardening.

Materials/Products Title	Format (Brochure, Factsheet,	Willing to share?	Product in the PEPH
	DVD/Video, Website, etc.)		Resource Center?
	Factsheet / Website	Yes	No
Sources and Impacts of Contaminants in Soils			
	Factsheet / Website	Yes	No
Guide to Soil Testing and Interpreting Results			
	Factsheet / Website	Yes	No
Soil Contaminants and Best Practices for Healthy			
Gardens			
	Website (Cornell CWMI)	Yes	No
Healthy Soils, Healthy Communities. A research			
and education partnership with urban gardeners			
	Factsheet / Website	Yes	No
General Best Practices for Healthy Gardening:			
What Gardeners Can Do.			

PEPH Program(s):

Research to Action

Assessment of Local Environmental Risk Training (ALERT) to Reduce Health Disparities

Key Personnel (Point of Contact) and Institution:

Steven P. Wallace, PhD, Principal Investigator Ying Ying Meng, PhD, Co Investigator Peggy Toy, MA, Project Director Jazmin Zane, MSW, Project Manager UCLA Center for Health Policy Research

Partners/Key Personnel and Institutions:

East LA Community Corporation, Isela Gracian, Associate Director
The Children's Clinic/Long Beach Alliance for Children with Asthma,
Elisa Nicholas, MD, Chief Executive Officer
UCLA Center for Occupational and Environmental Health,
John Froines, PhD, Research Scientist
End Oil / Communities for Clean Ports, Gisele Fong, PhD, Executive Director

Brief Description:

Assessment of Local Environmental Risk Training (ALERT) to Reduce Health Disparities aims to build the capacity of environmental health (EH) researchers and community based organizations (CBOs) to actively participate as equal partners in air quality research and develop their skills to effectively communicate risks and research findings to community members. The communities involved are low-income, largely Latino and immigrant, and are impacted by multiple air-quality problems. Closer coordination between researchers and community members enhance the science of conducting and translating research into action to address environmental exposures and health risks of concern to the public.

To achieve its aims, ALERT conducted several activities to build community based participatory research skills (CBPR) skills of researchers and community representatives, as well as foster trust and develop relationships between them. ALERT launched its researcher component in April 2010 with a convening on CBPR. The goal of this convening was to increase awareness of CBPR to improve the ability of researchers and community members to collaborate on environmental health research. Another goal of the convening was to recruit researchers to participate in the ALERT community training activities. Two community Train the Trainer (TTT) courses were conducted in Fall 2010 for community representatives and neighborhood residents with a vested interest in air quality issues. The ALERT TTT courses were 4 days long and covered topics on air pollution science, CBPR, a six-step process for conducting an environmental health assessment, and developing an evidence based environmental health action plan (EHAP). Participants also learned adult learning methods to train peers on the same topics they learned. TTT course graduates subsequently conducted EHAP community workshops for peers. Additional technical assistance sessions were conducted to further build skills and foster trust between community members and researchers. ALERT also issued an

RFP for CBPR pilot studies based on EHAPs developed in the community workshops. Community leaders, air quality researchers and regulators were engaged as reviewers.

Key Successes/Outcomes:

Researcher engagement activities resulted in a better understanding of the challenges and opportunities of CBPR. In-depth interviews were conducted with local key informants to better understand their awareness and engagement in CPBR. Researchers were familiar with CBPR but few were involved in CBPR projects. Researchers felt CBPR made research more meaningful but were concerned about institutional barriers, lack of funding, and community misconceptions about research. Organizations in ALERT communities had a high level of experience with CBPR and were concerned that researchers lacked understanding of the community and failed to disseminate their findings to the community. A key benefit of CBPR cited was the ability to use findings to advance EH policies. Findings led the ALERT team to design educational interventions that foster dialogue, shared learning, and collaborative strategies for translating research into action. ALERT researchers were invited to jointly participate in the Train the Trainer courses, which increased researcher contact with community representatives and vice versa, as well as creating an environment to foster trust. A total of 13 researchers attended a TTT course. A total of 54 community representatives participated in the TTT course. Most of the trainers (54%) had not previously participated in a TTT course. Trainers reported that the course was relevant to their work, with 55% of trainers indicating that the TTT was "extremely relevant" and 35% indicating that it was "very relevant." Most trainers did not have any previous experience with working directly with researchers (61%). Of the trainers who indicated that they had prior experience working with researchers, this experience was primarily with data collection and project development. A smaller portion of the sample indicated that they did not have direct contact with researchers, but was part of a team that worked with researchers (13%). At the end of the course trainers reported that they expected their community would benefit from their participation in the course by being able to identify community environmental health needs regarding air pollution (92%), developing an environmental health action plan (88%), and by an increase in collaboration between researchers and the community (86%). Out of the 54 community participants who completed the TTT, 47 of them (87%) completed 19 subsequent workshops within their local community, training over 350 community members. From these 19 workshops, community members completed EHAPs, identifying the data, stakeholders, primary questions, and actions needed to advance their air quality policy advocacy and community work. The ALERT TTT course achieved its aim of fostering partnerships between researchers and community representatives. As a result, three pilot study proposals were submitted from researcher-community partnerships. Two pilot studies using CBPR methods were awarded and are currently underway: "Boyle Heights Clean Air (BHCA)" a study of traffic generated air pollution and related health effects among children and the elderly; and "Central Long Beach Cumulative Impacts of Ambient Air Pollution on Health: Ground Truthing and Community Knowledge," a study on sources of air pollution in the Central Long Beach Area and awareness and perceptions of related health risks among members of the Cambodian community in the area.

Materials/Products Title	Format (Brochure, Factsheet,	Willing to share?	Product in the PEPH
	DVD/Video, Website, etc.)		Resource Center?
ALERT Train-the-Trainer Course Curriculum	Curricula	Yes	To be submitted May
			2012
ALERT Trainer's Guide	Booklet	Yes	To be submitted May
			2012
ALERT Environmental Health Action Planning	Chart	Yes	To be submitted May
tool			2012
ALERT Final Evaluation Report	Document	Yes	To be submitted May
			2012

PEPH Program(s):

ARRA Challenge Grant

Broadening a Statewide Initiative to Help NC Families Address Healthy Homes Issues

Key Personnel (Point of Contact) and Institution:

Kathleen Gray, Director

Community Outreach and Engagement Core, UNC Center for Environmental Health and Susceptibility

Partners/Key Personnel and Institutions:

Kathleen Gray, Director, UNC CEHS COEC
Neasha Graves, Manager, UNC CEHS COEC
Amy MacDonald, Environmental Health Educator, UNC CEHS COEC
Kelly Robinson, Research Assistant, UNC CEHS COEC

Brief Description:

The CEHS Community Outreach and Engagement Core's efforts focus on improving public understanding of how susceptibilities and environmental factors interact to cause disease, with a goal of enabling people to make informed decisions about reducing disease risk and hazard exposure. We rely on CEHS and other peer-reviewed environmental health science research, and we focus on reaching populations most susceptible to the diseases studied by CEHS and those who provide services to these populations. In the past year, we have continued to implement a multi-faceted healthy homes initiative, developing a module to use in training health and housing professionals and providing trainings for over 130 health, housing and child care professionals in vulnerable NC communities. In addition, the COEC trained community health workers in Lenoir, Guilford and Durham Counties to introduce healthy homes content and home improvement tools to their clients, resulting in dozens of home assessments in Lenoir County, NC. We also partnered with the state health department to educate maternal and child health professionals working to implement federal lead and pregnancy standards.

Key Successes/Outcomes:

In the past year, the COEC has worked to broaden its capacity to educate NC families by training public health and housing professionals who serve those families. Serving as a certified training partner of the National Center for Healthy Housing (NCHH), the COEC adapted the NCHH 7-Hour Healthy Homes for Community Health Workers curriculum to fit training needs in NC, training 42 community health workers in southeastern (Lenoir), central (Durham) and piedmont area (Guilford) counties. In pre- and post-workshop tests, over 95% of respondents gained knowledge about healthy homes concepts, especially in the area of indoor air quality. As a result, community health workers in Lenoir County have conducted 30 home assessments, providing advice to English and Spanish-speaking residents.

The COEC also raised awareness of healthy homes concepts for an additional 137 public health and housing professionals, community educators and senior-level community health nursing students with tailored,

condensed trainings. Pre- and post-workshop tests demonstrated that 82% of the nursing students gained knowledge about healthy homes concepts.

In addition to healthy homes training efforts, the COEC is working with the NC Division of Public Health to educate maternal and child health professionals about federal lead and pregnancy guidelines.

Materials/Products Title	Format (Brochure, Factsheet,	Willing to share?	Product in the PEPH
	DVD/Video, Website, etc.)		Resource Center?
UNC Center for Environmental Health and	website:	yes	
Susceptibility website	http://sph.unc.edu/cehs		
NC Healthy Homes website	website:	yes	
	www.nchealthyhomes.com		
Sentinel Newsletter (UNC CEHS Newsletter)	online newsletter	yes	
"Lead and Pregnancy" (in English and Spanish)	brochure	yes	

PEPH Program(s):

EHS Core Centers

Building Sustainable Community-based Research Infrastructure to Better Science (CRIBS)

Key Personnel (Point of Contact) and Institution:

Marion Kavanaugh-Lynch, M.D., M.P.H. California Breast Cancer Research Program (CBCRP) University of California, Office of the President

Partners/Key Personnel and Institutions:

Susan Braun, M.A., M.B.A. (Commonweal)
Marj Plumb, Dr.P.H. (Plumbline Coaching and Consulting)
Heather Sarantis, M.S. (Commonweal)
Catherine Thomsen, M.P.H. (CBCRP)
Senaida Fernandez, Ph.D. (CBCRP)
Emily Galpern, M.P.H. (Plumbline Coaching and Consulting)
Juliana Van Olphen, Ph.D. (San Francisco State University)

Brief Description:

The CRIBS program includes outreach and training efforts focused on mentoring community-academic teams to competence in conducting community based participatory research (CBPR) on breast cancer, the environment, and/or disparities. It is anticipated that communities and their academic partners throughout California who participate in the CRIBS training program will have the skill set to address knowledge gaps in these areas, and that the results can be utilized to take action and change health-related outcomes.

The program focuses on outreach to diverse community members, community organization representatives and academically trained researchers across the state of California to provide an overview of community-based research, an introduction to the California Breast Cancer Research Program's Community Research Collaboration (CRC) funding mechanism, an overview of the state of the science in environment, disparities and breast cancer, and the process for application to the CRIBS intensive training program (ITP) of the project. The ITP curriculum was developed to focus on (1) creating CBPR teams; (2) understanding the science of environmental causes of and disparities in breast cancer; (3) creating a pathway from vision to project; (4) writing successful grant applications to funders of CBPR research (including but not limited to, the California Breast Cancer Research Program). The ITP structure was developed to include face to face training, online training in a web-supported learning community, a mock grant review, and technical assistance. Program implementation will continue through the Fall of 2012.

Key Successes/Outcomes:

While evaluation of public health and policy impacts are premature at this point, the CRIBS partnership realized successes in outreach, and the design and implementation of the CRIBS intensive training program (ITP).

The CRIBS partnership:

- 1. Designed and implemented 11 outreach workshops across the state of California, that gave community members, community organization representatives and academically trained researchers an overview of community-based research, an introduction to the California Breast Cancer Research Program's Community Research Collaboration (CRC) funding mechanism, an overview of environment/disparities science, and the process for application to the CRIBS Intensive Training Program (ITP). Workshop participants included 272 individuals from 11 cities and the surrounding areas, including: Vista, Los Angeles, Chico, San Francisco, Oakland, Arcata/Eureka, San Bernardino, Merced, Sacramento, Nevada City, and Watsonville.
- 2. Developed and implemented the application process for the CRIBS ITP, provided one-on-one and webinar based technical assistance to 90 individuals. As a result, 22 applications were reviewed and 12 teams of 2-3 individuals accepted into the CRIBS ITP.
- 3. Developed and implemented the CRIBS ITP, and implementation will continue through the Fall of 2012.
- 4. Contracted with an external evaluator to create and implement program evaluation of process and outcome variables, utilizing a participatory evaluation approach.

PEPH Program(s):

ARRA Challenge Grant

Center for Ecogenetics and Environmental Health

Key Personnel (Point of Contact) and Institution:

Marilyn Hair, Jon Sharpe, Kelly Edwards Community Outreach and Ethics Core University of Washington

Partners/Key Personnel and Institutions:

Northwest Association for Biomedical Research
Fred Hutchinson Cancer Research Center
Duwamish River Cleanup Coalition/Technical Advisory Group
Northwest Science Writers
Lummi Ventures
Collaborative on Health and the Environment
Washington Toxics Coalition

Brief Description:

The Community Outreach and Ethics Core (COEC) of the Center for Ecogenetics and Environmental Health (CEEH) at the University of Washington has been active since the Center first was funded in 1996. The COEC partners with stakeholder groups who have an interest or need related to ecogenetics research, research ethics, or population-based health research to develop action-oriented projects. The COEC also works to build the capacity of CEEH investigators and trainees for public engagement, ethics, and teaching.

Key Successes/Outcomes:

Public Health Cafe is a quarterly discussion series held at a vegetarian restaurant during happy hour. During the PH Cafe, an expert makes an informal presentation about a timely topic in environmental health, followed by a small group activity or conversation about the ethical implications of the topic. Two events have been held to date that addressed epigenetics and biobanking.

Paws on Science is an annual exhibition for families hosted by the University of Washington at the Pacific Science Center in Seattle. COEC hosts a booth that teaches the relationship betwen genes, environment, behavior, and human health. We created the Magic Bead genetic test to find susceptibility to Smurfatosis, a pretend condition in which people turn blue after being in the sun too long. We also created the EcoGen card game with "fate" cards and "choice" cards to show that our health is the result of interactions between our genes, behaviors, and the environment (egogenetics).

The COEC has been working with a Wikipedia volunteer 'ambassador' to expand the open source Wikipedia articles about biobanking, and to add ethical considerations and citations. Our goal is to provide more complete and accurate information to the public. Collaborating with Wikipedia is unexplored territory, but there is potential to reach a large number of people and improve public literacy around research ethics.

With leadership from the COEC, a group of UW Environmental Health students and staff formed the Community Outreach and Research Engagement (CORE) group whose purpose is to pursue public engagement opportunities. We meet twice each quarter to plan outreach activities and participate in an activity about environmental health, compiling a toolkit of resources for students and staff to use in presentations. Students gain experience engaging the public by making presentations, staffing exhibits, visiting K-12 classrooms, and hosting tours of CEEH and university environmental health facilities.

COEC maintains a CORE group listserv to share opportunties, news and information with students and staff who sign up for the CORE group. In February, five students and staff led 90-minute sessions on environmental health in four 10th grade health classes at a suburban high school.

Materials/Products Title	Format (Brochure, Factsheet,	Willing to share?	Product in the PEPH
	DVD/Video, Website, etc.)		Resource Center?
Environmental Health Fact Files middle school	Curriculum	Yes	No
curriculum. Fact files for Lead, Asthma, Diabetes,			
Health & Environment. Portions also in Spanish.			
Genetics and Epigenetics poster	Poster	Yes	No
Smurfatosis genetic test activity	Activities	Yes	No
EcoGenetics card game			
Environmental Health History Cards	Activity	Yes	No
Your Money or Your Life genetic testing role play	Activity	Yes	No
Fast Facts sheets about Epigenetics, Biobanking	Factsheet	Yes	No

PEPH Program(s):

EHS Core Centers
ARRA Challenge Grant

CHAMACOS Community Outreach and Translation Core

Key Personnel (Point of Contact) and Institution:

Daniel Madrigal, UC Berkeley

Partners/Key Personnel and Institutions:

Brenda Eskenazi , UC Berkeley
Asa Bradman, UC Berkeley
Meredith Minkler, UC Berkeley
Daniel Madrigal, UC Berkeley
Jose Camacho, Clinica de Salud Valle de Salinas
Kimberly Parra, Clinica de Salud Valle de Salinas

Brief Description:

The CHAMACOS Community Outreach Core has several goals, including: (1) dissemination of study findings, (2), providing a mechanism for community members to participate in the research process, (3) increasing awareness about children's environmental health, (4) targeted outreach to prevent exposures, (5) developing an environmental health leadership program for adolescents, and, (6), when requested, educating policy makers about the implications of our research. These activities take place in conjunction with the CHAMACOS Study, a longitudinal birth cohort study examining environmental exposures and children's health and development in an agricultural region. Our central communication mechanism is a Community Advisory Board (CAB) consisting of farmworkers, county health and agricultural officials, community groups, elected officials, and agricultural industry representatives. Research findings are also disseminated through study participant and community fora, newsletters, and a website. Environmental education and exposure-prevention activities are conducted at several levels, including education to farmworkers and families, training of service providers such as schools officials, delivery of physician-training presentations, and working with growers to prevent pesticide exposures. In this presentation, the overall outreach program and the essential components of our communication strategy for each population will be described.

Key Successes/Outcomes:

Since the inception of the project we have engaged with almost 17,000 community members, including over 12,000 adults and over 4,000 children. The topics have covered a range of environmental health issues including: Environmental quality in child car.

Materials/Products Title	Format (Brochure, Factsheet,	Willing to share?	Product in the PEPH
	DVD/Video, Website, etc.)		Resource Center?
Prenatal Enviromental Health Kiosk for Low-	Software (PC/MAC)/Website	Yes	No
income Latino Mothers			
Brochures that accompany the Prenatal Kiosk on	Brochures	Yes	No
specific enviromental health issues			
CERCH's website where we provide a	Website	Yes	No
comprehensive summary of the CHAMACOS			
Study, relevant environmental health issues, and			
educational resources for community groups			
Integrated Pest Management Toolkit for child	Toolkit	Yes	No
care providers.			

PEPH Program(s):

Centers for Children's Environmental Health & Disease

Community Assessment of Freeway Exposure and Health

Key Personnel (Point of Contact) and Institution:

Doug Brugge, Tufts Medical School

Partners/Key Personnel and Institutions:

Ellin Reisner, Somerville Transportation Equity Partnership
John Durant, Tufts School of Engineering
Wig Zamore, Somerville Transportation Equity Partnership
Edna Carrasco, Committee for Boston Public Housing
Lydia Lowe, Chinese Progressive Association
Yuping Zeng, Chinatown Resident Association
John Spengler, Harvard School of Public Health
Emmanuel Owusu, City of Somerville

Brief Description:

CAFEH is a CBPR study of near highway pollution, primarily ultrafine particles, and markers of cardiovascular health in older adults. We are recruiting participants and measuring air pollution levels in three study areas next to and farther away (urban background) from highways in Boston and Somerville, MA. Air pollutants, including particle number count as our primary indicator of exposure to UFP, are measured using a mobile monitoring lab that travels fixed routes through the study areas. We measures pollution levels at different times of the day, days of the week and seasons and in varying weather conditions. We also measure PNC at stationary sites immediately adjacent to the highways in each neighborhood. And we have collected indoor/outdoor measurements at a small subset of homes in Somerville. Residents are recruited in stratified samples 1/3, 1/3, 1/3 each living <100 m, 100-400 m and >1000 m from the highway. Participants complete an in-home survey and attend 1-2 clinics at which they complete a second, briefer survey and provide a blood sample, blood pressure measures (including ABI), height and weight. Blood is analyzed for lipid profile on site and stored for batch analysis of CRP, IL6, TNFa-RII and fibrinogen. We are conducting a series of analyses, including several using partial data sets, such as PNC data from Somerville and time series analysis of blood markers from Somerville. But our primary aim is to build models of PNC across all three neighborhoods, to modify ambient exposure at the residence by time activity and infiltration into the home and to test associations with biological markers using structural equation modeling. As a CBPR study, with community representatives active in all phases of the research, we are also interested in dissemination of our findings and our knowledge of the broader literature to the communities, the general public and policy makers. We have made some progress on this front and plan to do much more as our analyses emerge. Finally, we have to off-shoot studies of in-home HEPA air filtration aimed at producing pilot data on efficacy for reducing blood markers of inflammation.

Key Successes/Outcomes:

Our study is completing the fourth year of five years of funding from NIEHS. Participant recruitment is complete and environmental data collection is nearing completion. We have met or exceeded our

recruitment targets and our environmental monitoring data set is a highly dense near highway record that has rarely been collected. Our partnership remains strong, with active participation from all our collaborators and partners. There is considerable interest in our study in the target communities and more broadly in the Boston area (http://sites.tufts.edu/cafeh/publications-and-news-media/). We have had regular news coverage of the study and attendance at our advisory board meetings is high (40-45 people) and includes elected officials and their representatives, public and environmental health agency staff, participants in the study, and community-based leaders. We have also made numerous presentations about the issue of near highway pollution to public health and policy audiences.

We have published 7 peer reviewed papers so far that have reported on the process of the project, analyzed secondary data from an unrelated longitudinal cohort for roadway proximity, reviewed the literature or analyzed data from one of the pilot studies we conducted prior to the start of CAFEH. The first papers based solely on CAFEH data have been submitted and are under review. We have an ambitious analysis and publication plan that we hope will lead to many papers coming out over the next year or two.

Materials/Products Title	Format (Brochure, Factsheet,	Willing to	Product in the PEPH
	DVD/Video, Website, etc.)	share?	Resource Center?
Web site: http://sites.tufts.edu/cafeh/	Web site	Yes	No
Newsletter:	Newsletter	Yes	No
http://sites.tufts.edu/cafeh/files/2012/01/CAF			
EH-Spring-2011-Newsletter.pdf			
Film: http://sites.tufts.edu/cafeh/ (bottom of	Video documentary	Yes	No
page)			
EHP article:	Scientific article	Yes	No
http://ehp03.niehs.nih.gov/article/fetchArticle.			
action?articleURI=info%3Adoi/10.1289/ehp.09			
01182			
ACP article:	Scientific article	Yes	No
http://sites.tufts.edu/cafeh/files/2012/01/Shor			
t-term-variation-in-near-highway-pollutant-			
gradients-on-a-winter-morning_2010.pdf			

PEPH Program(s):

CBPR

Community Engagement Core (Brown Superfund Research Program), Community Outreach and Translation Core (Brown Children's Environmental Health Center)

Key Personnel (Point of Contact) and Institution:

Phil Brown, Brown University

Partners/Key Personnel and Institutions:

Environmental Justice League of Rhode Island Woonasquatucket River Watershed Council Environmental Action Committee of Tiverton Hospitals for a Healthy Environment in RI RI Department of Health RI Department of Environmental Management

Brief Description:

The Community Engagement Core (CEC) supports communities that are dealing with toxic contamination in Rhode Island. At Brown, we have developed a team of 10 graduate and undergraduate students that meet regularly to participate in and coordinate CEC projects. In 2011 we worked in four main programmatic areas. First, we worked with community partner the Environmental Justice League of Rhode Island (EJLRI) to extend our youth-focused environmental health and justice programs. These include the Community Environmental College, a free summer program for local youth to build literacy in environmental health and justice; ECO Youth, an afterschool program focused on environmental justice; the Healthy Corner Store Initiative, a project to promote the availability of healthy food; and GreenStage, a youth theater program. Second, we continued our outreach and advocacy in the broader Providence community with three additional collaborations with our community partners. These include: Weatherization Open Houses, a program to help individual families weatherize their residences; the Science Cafe, a program to bring experts together with the public to discuss environmental health issues; and the DEM's Brownfields Environmental Equity Stakeholder Workgroup, a project to develop state policy regarding brownfields development in environmental justice communities, and school siting on contaminated land. Third, we supported efforts to remediate contaminated sites in three neighborhoods. And fourth, we initiated Hospitals for a Healthy Environment in Rhode Island, a statewide coalition of hospitals, professional associations, nursing schools, unions, academic institutions, government agencies, local food groups, and environmental groups which promotes cost-effective, healthy and sustainable health care institutions.

Key Successes/Outcomes:

Overall, our work has continued to have a strong impact in increasing awareness and engagement of environmental health and justice issues in Rhode Island. We have fulfilled a critical role of bridging Providence youth, community organizations, local, state and federal decision makers, and the Brown University community. Our expanded youth programs now provide high school students in Providence with

year-round opportunities to develop leadership capabilities, build knowledge about environmental health and justice, gain access to mentorship for applying to college, and engage in projects that have direct and tangible impacts in the community. Our work with neighborhoods, community partner organizations and state agencies to improve remediation efforts of contaminated sites has led to increased participation and coordination across various stakeholders. We have also provided a readily accessible way for the Brown undergraduate and graduate students to engage in supporting environmental justice community projects, while building core leadership skills. Finally, our work collaborating on environmental justice policy development with the DEM, our efforts to ensure access to healthy foods, and our work for healthy hospitals is providing leadership at the cutting edge of national efforts in this direction.

Materials/Products Title	Format (Brochure, Factsheet,	Willing to share?	Product in the PEPH
	DVD/Video, Website, etc.)		Resource Center?
Community Environmental College summary	Pdf	Yes	Yes
report			
Community Envirionmental College brochure	Pdf	Yes	Yes
Community Engagement Core brochure	Pdf	Yes	Yes
Environmental Justice Curriculum	Pdf	Yes	Yes
Healthy Hospitals Rhode Island summary report	Pdf	Yes	Yes

PEPH Program(s):

Centers for Children's Environmental Health & Disease Superfund Research Program

Community Mapping of Environmental Hazards and Barriers in an Immigrant Population

Key Personnel (Point of Contact) and Institution:

Peggy Reynolds (Principal Investigator), Cancer Prevention Institute of California

Partners/Key Personnel and Institutions:

Thu Quach (Co-Investigator), Cancer Prevention Institute of California Julia Liou, Asian Health Services Lisa Fu, California Healthy Nail Salon Collaborative

Brief Description:

The purpose of the study was to identify and characterize neighborhood-level environmental hazards and health access barriers in the Vietnamese communities in California to inform efforts for addressing their health disparities. We accomplished this through three phases of data collection and analysis:

Phase I - Focus Groups: We conducted a series of focus groups in four counties in California with a larger aggregation of the Vietnamese population. We conducted three focus groups by general age groups (i.e., young adults, adults and elderly) in Alameda County, Marin County, Orange County and Santa Clara County. Results from these focus groups informed the development of our next phase of data collection and analysis.

Phase II - Community Audit Pilot Test: We developed a walking audit that included multiple components of data collection. First, we adapted a community audit survey on neighborhood accessibility for the aging population, incorporating additional environmental and neighborhood themes that emerged from the focus groups. In addition, community auditors wore GPS devices and real-time personal devices (Magee Scientific MicroAeth AE51) to monitor black carbon, which are mainly emitted from diesel engines. Using photovoice documentary methods, auditors also took pictures and noted perceived positive and negative aspects of their neighborhoods. We piloted this community audit data collection method with three Vietnamese community members. Results from the pilot helped to inform the revision of the community audit method.

Phase III - Community Audit Implementation: We trained community agencies and community members to conduct community audits in their residential and work neighborhoods. We implemented this audit in the four counties (Alameda County, Marin County, Orange County and Santa Clara County). Auditors were assigned specific audit street segments (each being approximately one city block long) based on areas where they live and/or work. 66 Vietnamese community auditors conducted a total of 276 audit street segments, including 134 business (48.6%) and 142 residential (51.4%) segments.

Key Successes/Outcomes:

We successfully engaged community members in collecting qualitative and quantitative environmental data on their local neighborhoods. Lessons learned include:

- Community collected data highlighted neighborhood-level aesthetics, safety, litter, traffic, road/sidewalk condition and air quality, which reflect major community concerns for environmental hazards.
- Comparisons between community-collected snapshot data to governmental monitoring data for traffic and black carbon help to inform how well secondary data can capture local environmental hazards. For example, community-collected black carbon data emphasized differences in environmental exposures at varying geographic scale and length and timing of measure.
- 3. Based on preliminary results, community auditors helped to identify contributing factors, including reasons for graffiti as well as school buses and idling trucks for black carbon measure.
- 4. Community auditors noted their participation helped increase their awareness around environmental hazards and have voiced interest in continuing these efforts.

Additionally, we are exploring the use of this data collection method in the City of Oakland where one of our community partners is involved in city planning efforts to stop the city from placing an additional freeway ramp in the Oakland Chinatown area. The addition of a freeway ramp in that local area would significantly increase traffic, with implications on air quality as well as pedestrian safety (Oakland has a high elderly population in that area). Data previously collected from the project is being explored to inform these efforts. Additionally, we are working to engage local residents in the collection of black carbon data around the proposed area for the freeway ramp placement.

Materials/Products Title	Format (Brochure, Factsheet,	Willing to share?	Product in the PEPH
	DVD/Video, Website, etc.)		Resource Center?
Focus Group Topic Guide (English and	Written open-ended survey	Yes	No
Vietnamese)	questions		
Community Environmental Audit Survey (English	Written Survey	Yes	No
and Vietnamese)			
Photovoice Log Form (English and Vietnamese)	Written log form	Yes	No
Community Audit Training Manual (English and	Written manual for how to	Yes	No
Vietnamese)	conduct a community audit		
Community Auditor Pre- and Post-Audit Surveys	Written surveys	Yes	No
(English and Vietnamese)			

PEPH Program(s):

ARRA Challenge Grant

Community Outreach and Engagement Core

Key Personnel (Point of Contact) and Institution:

Laura Liang, UMDNJ-School of Public Health Erin Caswell, UMDNJ-School of Public Health

Partners/Key Personnel and Institutions:

Fletcher Harper and Jamaal Reavis, GreenFaith

Brief Description:

The Community Outreach and Education Core (COEC) translates the Center for Environmental Exposure and Disease (CEED) research information into tools and resources for community stakeholders. The overall goals are to develop partnerships with community stakeholders to translate and disseminate Center research; enhance dialogue between community stakeholders and Center researchers regarding environmental health; increase awareness and understanding of environmental health research; and promote environmental health research as a career. COEC s target audience is the Community which is divided into three segments. Research Attentive are community members with a high level of interest on a particular environmental health issue due to their or a family member s disease. Research Interested are community members with a general interest in environmental health. Future Researchers includes science-oriented high school, undergraduate and graduate students who intend to pursue science.

Key Successes/Outcomes:

Informal Research Discussions are a key activity of COEC. These sessions facilitate two-way communication between public stakeholders and researchers. Since 2008, there have been two discussion sessions about asthma/lung disease, three about Parkinson's disease, three about breast cancer, and 10 involving faith-based communities. The discussion sessions better inform the public stakeholders about research and scientists who conduct the research, as well as provide an opportunity for the scientists to learn, first-hand, about the interests of the public. COEC has successfully implemented this strategy with its partners to translate and disseminate relevant research to the Parkinson's disease, breast cancer, asthma/lung disease and faith-based communities. The nearly 300 participating stakeholders valued the Discussions and would recommend them to others. As one participant noted, The interaction was very exciting and informative. The participating scientists and students also found the Discussions beneficial. As a scientist noted, The interaction between community and scientists improved knowledge both ways.

COEC also hosts Research Field Trips for high school students each year. Field trips originally targeted high school students enrolled in the Research Methods elective at the Woodbridge Township School District. This Research Methods elective is a successful, authentic, three-year course for advanced science students in grades 10-12. The Research Methods students conduct independent research during the junior and senior years. Field trips are typically conducted during their sophomore year and serve as an introduction to environmental health research so that students may then select an environmental health research topic for their independent research. New this year, a field trip targeted to middle school students participating in a

Science Research Club/Class at the same school district was also conducted. During the field trips, students meet with scientists and tour research labs.

The first COEC Peer Cluster Evaluation was held on March 25, 2010 at UMDNJ/Rutgers University. The Peer Cluster Evaluation was designed to assist COECs to examine their program evaluation technique by discussing current program evaluation methods and information obtained from prior efforts and generating information that will increase effectiveness of current program evaluation methods that will assist with determining progress towards achieving program stated goals. A Peer Cluster Evaluation site visit format was developed at this first site visit and was used again on October 24, 2011 by Columbia University's COEC who hosted a Peer Cluster Evaluation site visit to examine and improve their evaluation methods. COECs at UMDNJ/Rutgers University, Columbia University, Johns Hopkins University and University of Pennsylvania have participated in these Peer Cluster Evaluation site visits. The COECs at Johns Hopkins University and University and University of Pennsylvania are expected to also host a site visit within the next two years.

Materials/Products Title	Format (Brochure, Factsheet,	Willing to share?	Product in the PEPH
	DVD/Video, Website, etc.)		Resource Center?
Evaluation Forms	paper	Yes	No
Field Trip Agendas	paper	Yes	No
Peer Cluster Evaluation Agenda	paper	Yes	No

PEPH Program(s):

EHS Core Centers

Community Outreach and Engagement Program, Southern California Environmental Health Sciences Center, University of Southern California Keck School of Medicine

Key Personnel (Point of Contact) and Institution:

Andrea Hricko, COEC Director, Southern CA Environmental Health Sciences Center, Keck School of Medicine of USC, Los Angeles, CA ahricko@usc.edu

Partners/Key Personnel and Institutions:

The Trade Health and Environment Project (THE Impact Project). Partners:

- COEC at USC's Environmental Health Sciences Center
- Urban and Environmental Policy Program (UEPI) at Occidental College
- Long Beach Alliance for Children with Asthma
- Center for Community Action and Environmental Justice
- East Yard Communities for Environmental Justice, and
- Communities for a Safe Environment.

Brief Description:

In 2005, our COEC was a key partner in forming a community-academic collaborative called The Trade, Health and Environment Project (or THE Impact Project). Over the past 5 years, THE Impact Project has been identified as a leading group in the U.S. focused on the issue of environmental health impacts from ports/rail yards/warehouses and truck-congested highways handling international trade coming into the U.S. THE Impact Project uses science-based information and community engagement to inform public policy decisionmaking, encouraging healthy solutions for communities impacted by ports, rail yards, intermodal facilities, distribution centers, trucking routes and other goods movement expansion activities. One of its goals is to ensure that reducing health, environmental and community impacts becomes central to the transportation planning and policy process. THE Impact Project also seeks to shift the nature of the debate about ports and freight movement to elevate community voices in policy-making, while also using the science and policy work of the academic partners to strengthen those voices. In 2010 the USC Center's COEC & THE Impact Project held its second national meeting on the impacts of international trade on local communities in the U.S. That meeting had more than 600 attendees including residents from many port communities around the U.S., representatives of several other NIEHS Centers and COECs, and attendees all the way from Australia experiencing similar problems near ports. Attendees urged a more formal national network to allow sharing of information and strategies to reduce air pollution and other impacts around goods movement. In response, in January 2012, the USC Center's COEC and THE Impact Project organized a gathering with 45 attendees from CA, KS, MI, MS, NY/NJ, TX, and WA. A a steering committee is developing

a nationwide network governance structure. Also, The Kresge Foundation asked UEPI at Occidental College with the USC COEC to write a report on the national landscape of goods movement activities.

Key Successes/Outcomes:

The Ports of Los Angeles and Long Beach have adopted and are implementing a Clean Air Action Plan and a Clean Trucks Program, dedicated to significant reductions in diesel exhaust. The Clean Trucks Program will be fully implemented in 2012 and bans from the Ports all trucks that do not meet the 2007 Federal Clean Truck Emissions Standards. USC and members of THE Impact Project received a national EJ award from U.S. EPA for their efforts in bringing attention to the air pollution concerns and informing the Ports about environmental health issues, noting the role that these efforts played in having the Ports adopt these significant emission reduction programs. Without consistent efforts to inform decisionmakers about the Center's and other scientists' research results, the topic of adverse health impacts from port-related air pollution would not have played such a significant role in political and economic development discussions. Even Harbor Commissioners have given credit to USC and its partners for their role: "We know that air pollution causes serious health effects. Your Center's work and that of others has convinced us that we need to act." (Long Beach Harbor Commissioner Mario Cordero in 2008).

The USC Center's COEC and 3 of THE Impact Project partners are involved on committees regarding expansion of the I-710 Freeway, an 18 mile long highway on which 30,000 trucks a day travel to and from the Ports. Of particular concern are near-roadway health effects, a research topic of many USC Center scientists. The USC COEC and its partners -- along with the L.A. County Public Health Department -- informed the involved agencies and policy makers of the value of Health Impact Assessments (HIA) as an addition to the regular environmental impact assessment. As a result, an HIA was conducted for the I-710 Project, the first HIA for such a large transportation infrastructure project in the U.S.

With regard to rail yards, the USC Center's COEC and its community partners participated in 8 community meetings with the CA Air Resources Board aimed at developing strategies to reduce locomotive pollution. This work has led to mitigation plans to reduce diesel emissions at the yards.

The main work of the USC COEC is translating the air pollution and health research findings of scientists from the Southern CA Environmental Health Sciences Center. There has been a remarkable change over 10 years in the recognition and acceptance by government agencies about adverse health effects of air pollution (including near-roadway and goods movement). One example: a 2002 report by the Southern CA Association of Governments on the impacts of international trade failed to include the word "health," which the COEC pointed out in public comments. Subsequently, Center scientists and the COEC director testified numerous times before SCAG committees of staff and elected officials, and the COEC director and several community partners were appointed to the SCAG goods movement committee and also participated in discussions about the SCAG Regional Transportation Plan (RTP). The 2012 draft environmental review of SCAG's RTP has a full 9 pages about health effects of air pollution, including several pages with details about USC's near-roadway research findings and its studies on the effects of air pollution on children's respiratory health.

Materials/Products Title	Format (Brochure, Factsheet,	Willing to share?	Product in the PEPH
	DVD/Video, Website, etc.)		Resource Center?
Trade, Health and Environment: Making the	Report can be downloaded at	Yes	Yes
Case for Change 2009 Impact Accomplishments	www.TheImpactProject.org		
Report			
Video stories from the Moving Forward	Videos are available at	Yes	DVD submitted
Together conference	www.TheImpactProject.org		
THE Impact Project Video	Available at	Yes	DVD submitted
	www.TheImpactProject.org		
THE Impact Project digital stories.	Videos are available at:	Yes	DVD submitted
	www.TheImpactProject.org		
Global Trade Impacts: Addressing the Health,	Available at	Yes	Hard copy submitted
Social, and Environmental Consequences of	www.TheImpactProject.org		
Moving International Freight Through Our			
Communities. Authors: Martha Matsuoka,			
Andrea Hricko, Robert Gottlieb and Juan deLara.			
March 2011. Funded by The Kresge Foun			
THE Impact Project Policy Brief Series, 2012. (1)	Available at	Yes	Hard copies
Driving Harm: Health and Community Impacts	www.TheImpactProject.org		submitted.
of Living near Truck Corridors; Importing Harm:			
U.S. Ports' Impacts on Health and			
Communities; Tracking Harm:			
Health and Environmental			
Impacts of Rail Yards; St			

PEPH Program(s):

EHS Core Centers

Community Outreach and Translation Core (COTC) of the Columbia Center for Children's Environmental Health (CCCEH)

Key Personnel (Point of Contact) and Institution:

David Evans, COTC Co-Director at CCCEH
Brennan Rhodes, COTC Program Coordinator at CCCEH

Partners/Key Personnel and Institutions:

Peggy Shepard, COTC Co-Director and Executive Director of WE ACT for Environmental Justice (WE ACT) Ogonnaya Dotson-Newman, Acting Director of Environmental Health at WE ACT

Brief Description:

The Columbia Center for Children's Environmental Health (CCCEH) is studying 725 African-American and Latino pregnant women and their children. The children's health is monitored from birth through adolescence to assess the impact of exposures to polycyclic aromatic hydrocarbons (PAHs), chlorpyrifos, secondhand smoke, bisphenol-A (BPA), phthalates, polybrominated diphenyl ethers (PBDEs), and pest allergens. The Community Outreach and Translation Core (COTC) of (CCCEH) has three main strategies to engage CCCEH with our community: (1) work with our Community Advisory & Stakeholder Board (CASB) to ensure an open exchange of information and concerns about environmental health issues; (2) translation of CCCEH research findings; and (3) community outreach and engagement to disseminate our findings and address community concerns. COTC works together with our lead partner, WE ACT for Environmental Justice (WE ACT), and our CASB to ensure that our activities are culturally relevant and feasible for low-income mothers and communities of color. COTC, WE ACT, and our CASB collaborate to plan and carry out specific activities, which generally combine these strategies. A major activity is the Healthy Home, Healthy Child Initiative (HHHC) to educate community residents about environmental health through workshops and written materials we develop with CASB input. We present translated research findings in policy briefings for elected officials and policymakers, public testimony on pending legislation, and grand rounds and classroom presentations for health professionals. We host and take part in conferences and community outreach events. We have worked with WE ACT and other partners through the EPA CARE initiative to assess community environmental concerns and improve waste management practices. We have also carried out community-based research with the NYC Dept. of Health (DOHMH) and Housing Authority (NYCHA) to evaluate the effectiveness of IPM in public housing.

Key Successes/Outcomes:

Testimony by CCCEH and WE ACT has helped the passage of laws that protect public health. CLEANER AIR: Findings on harmful effects of diesel soot helped pass (a) NYC local law 77 mandating use of ultra-low sulfur diesel fuel in MTA bus fleet, reducing tailpipe emissions by 95%, and (b) NYC #6 Heating Oil Phaseout regulation, requiring all NYC buildings to heat with cleaner #2 oil or gas by 2020. REDUCING ASTHMA TRIGGERS: Testimony about impact of indoor allergens on asthma led NYC to adopt the NYC Safe Housing Act, which mandated more stringent remediation requirements for landlords to reduce mold and vermin

infestation. FEWER PESTICIDES IN PUBLIC HOUSING: As a result of COTC research with DOHMH and NYCHA on IPM, NYCHA converted from spray pesticides to less harmful baits and gels. Then CCCEH research on harm from pesticides influenced NYC to pass Local Law 37 mandating use of integrated pest management (IPM) in public housing and schools. RESTRICTING USE OF ENDOCRINE DISRUPTING CHEMICALS: Testimony about CCCEH research on children's exposure to endocrine disrupting chemicals helped pass two NY State laws eliminating BPA from plastic products used by children, as well as the use of chlorinated TRIS, a flame retardant in clothing and household furnishings.

Research translation and dissemination of findings: In 2009, CCCEH and WE ACT held a conference on TRANSLATING SCIENCE TO POLICY for community groups and residents, policymakers and elected officials, and environmental health researchers. The conference presented CCCEH findings on air pollution and climate change, pesticides and IPM, and endocrine disrupters. Panel discussions focused the implications of these findings for public policy, including our finding that prenatal secondhand smoke exposure causes an estimated \$99 million per year in early intervention services for developmental delays in newborns in NYC. Work with our CASB: We met five times in 2011 with our CASB to plan outreach initiatives. Working with CASB and WE ACT we planned and hosted the first of a series of community breakfast briefings to engage community groups, environmental organizations, elected officials and city agencies in dialogue about CCCEH findings and how to encourage policy reform to improve prevention. We also worked together on the development of a BPA tip sheet: CASB members hosted focus groups and reviewed draft materials, ensuring that it will reflect community perspectives. Finally, the CASB is working with COTC, WE ACT, and CCCEH researchers to redesign the HHHC initiative to focus less of specific chemical risks, and more on promoting healthy, protective habits.

Materials/Products Title	Format (Brochure, Factsheet,	Willing to share?	Product in the PEPH
	DVD/Video, Website, etc.)		Resource Center?
Healthy Home, Healthy Child: Know Your	Interactive Display	Yes	No
Neighborhood & Know Your Kitchen (2011)	English and Spanish		
HHHC:Protect Your Children from Pesticides	Brochure	Yes	No
(2010)	English and Spanish		
HHHC: Protecting Your Children from Asthma	Newsletter	Yes	
What you can do! (2009)	English and Spanish		
HHHC: Protecting Your Children from Mercury	Newsletter	Yes	
What you can do! (2007)	English and Spanish		
HHHC: Protecting Your Children from Air	Newsletter	Yes	
PollutionWhat you can do! (2005)	English and Spanish		
HHHC: Protecting Your Children from	Newsletter	Yes	
Environmental Pollutants (2004)	English and Spanish		

PEPH Program(s):

Centers for Childrens Environmental Health Disease

Community-Academic Linkages to Build a National Network for Farmworker Research

Key Personnel (Point of Contact) and Institution:

Sharon P. Cooper, PhD
The University of Texas Health Science Center at Houston
School of Public Health San Antonio Regional Campus (UTSPH-SARC)

Partners/Key Personnel and Institutions:

Sharon P. Cooper, PhD (Lead PI; UTSPH-SARC), Deborah del Junco, PhD, & Maria Fernandez, PhD (UTSPH); Bobbi Ryder (Multiple PI) & Sylvia Partida (National Center for Farmworker Health); Ed Hendrikson, PhD (Multiple PI, Salud Family Health Centers); Nick Heyer, PhD (Battelle); Eva Shipp, PhD (Texas A&M Health Science Center School of Rural Public Health)

Brief Description:

Farmworkers and their families suffer a disproportionate number of injuries and illnesses associated with their work and limited resources. To create previously unattainable and relevant research opportunities that focus on understanding and promoting both the general and the occupational health and safety of farmworkers, we are developing a community based research network. The network is based upon a consortium of existing Community and Migrant Health Centers (C/MHCs) and organized by the National Center for Farmworker Health in conjunction with The University of Texas School of Public Health and Battelle. Through this reciprocal and equitable community and academic partnership, we are building the necessary infrastructure for linkage of electronic medical records from network clinics to construct a research database and produce a Limited Dataset (HIPAA 45 CFR 164.514e). This effort, and all associated future research, will be guided by mutually engaged partners through a National Steering Committee and National Advisory Council, including farmworkers, healthcare providers, community and migrant health organizations, and academic researchers. Consequently, this project supports the patient centered medical home model because it provides a platform for evidence based medicine. It also assists C/MHCs to ensure meaningful use of their electronic medical records by increasing access to information for the purpose of providing high quality and efficient care. This network will be sustained by leveraging resources, including C/MHCs, academic health centers, and future funding opportunities from federal and other agencies that support improving farmworker health and reducing health disparities. This three-year project is in its second vear.

Key Successes/Outcomes:

Obtained a Certificate of confidentiality from NIH-NIEHS. This is notable because NIH does not
usually provide certificates of confidentiality to projects that do not involve informed consent. To
our knowledge, our project is the first.

- Identified key partners and stakeholders who support the creation of a nationally representative database for farmworker health research and engaged them in the process of building needed project infrastructure.
- Assembled the National Steering Committee; identified needed representatives for the National Advisory Committee; developed a procedure for working by consensus.
- Received IRB approvals.
- Engaged first pair of participating C/MHCs.
- Developed a draft data use agreement and protocols governing use of the Limited Dataset for research.
- Developed, with broad input, a list of data fields to be abstracted from the EMRs that will be tested to determine if this set of data fields captures sufficient details to conduct informative farmworker research.
- Conducted first reciprocal research training session.
- Refined plans for pilot testing the research database to include an assessment of the use of EMRs to collect occupational data. This is supportive of a national effort that is currently underway.

Materials/Products Title	Format (Brochure, Factsheet, DVD/Video, Website, etc.)	Willing to share?	Product in the PEPH Resource Center?
Data use agreements	Word Document	Yes	To be uploaded
List of required data fields from the EMRs.	Word Document	Yes	To be uploaded

PEPH Program(s):

ARRA Challenge Grant

Dartmouth Toxic Metals Superfund Research Program Coastal and Marine Mercury Ecosystem Research Collaborative

Key Personnel (Point of Contact) and Institution:

Celia Chen, PI, Research Translation Core, Dartmouth SRP Laurie Rardin, Research Translation Coordinator, Dartmouth SRP

Partners/Key Personnel and Institutions:

Robert Mason, University of CT
Elsie Sunderland, Harvard University
Rita Schoeny, US EPA
Margaret Karagas, Dartmouth SRP
David Evers, Biodiversity Research Institute

Brief Description:

C-MERC (www.c-merc.org) successfully fulfilled its goal of bringing together experts in marine mercury research and policy stakeholders to collaborate on a series of scientific papers on fate, cycling and uptake of mercury in ocean systems and human exposure to mercury world-wide. Two workshops were held, the second of which preceded a Dartmouth RTC sponsored C-MERC special session as part of the International Conference on Mercury as a Global Pollutant in Halifax, NS in July 2011. Nine ocean system and process papers were submitted to Environmental Research, many of which are provisionally accepted, and two on human health were submitted to EHP, both of which have been accepted. We have engaged stakeholders to partner with us for the development of translation products for the policy and lay communities including a short movie on Hg in the environment and a lay report.

Key Successes/Outcomes:

The papers, policy synthesis report and short video resulting from C-MERC will inform current international, national (U.S), and regional policy responses to mercury in the environment including the UNEP Binding Agreement on mecury, UNEP Fate and Transport Partnership, Mercury Monitoring Networks, USEPA's Electrical Generating Unit Toxics Rule and other standards. The Dartmouth RTC has actively facilitated dialogue between stakeholders (governmental and non-governmental) and mercury scientists through the C-MERC invitational workshops with the goal of summarizing and synthesizing the large and emerging body of science on this issue. This work ranges from the sources of mercury in the environment to the effects of consuming methylmercury through seafood.

Materials/Products Title	Format (Brochure, Factsheet, DVD/Video, Website, etc.)	Willing to share?	Product in the PEPH Resource Center?
C-MERC Policy Report (in progress)	Report 24 pps	yes	Not yet
Mercury Movie (in progress)	DVD/video	yes	Not yet
C-MERC Papers	Peer-reviewed papers	yes	not yet

PEPH Program(s):

Superfund Research Program

Educating African American Women in North Carolina about Basal-Like Breast Cancer

Key Personnel (Point of Contact) and Institution:

Neasha Graves, BCERP Community Partner Coordinator, UNC Center for Environmental Health and Susceptibility

Partners/Key Personnel and Institutions:

Melissa Troester, Principal Investigator, UNC Gillings School of Global Public Health Liza Makowski, Co-Principal Investigator, UNC Gillings School of Global Public Health Kathleen Gray, UNC Center for Environmental Health and Susceptibility Neasha Graves, UNC Center for Environmental Health and Susceptibility Marlyn Allicock, UNC Gillings School of Global Public Health

Brief Description:

The University of North Carolina at Chapel Hill's Breast Cancer and the Environment Research Program (BCERP) is comprised of a team of researchers from the UNC Gillings School of Global Public Health and the Lineberger Comprehensive Cancer Center who are investigating obesity, pregnancy and other environmental influences upon susceptibility to basal-like breast cancer among young African American women. The BCERP Community Partner is assessing the breast cancer related educational needs of premenopausal African American women and the health care practitioners who serve them and developing educational materials that respond to these needs. The Community Partner is also pilot testing these materials with lay health advisors and convening a Community Advisory Committee (CAC) to facilitate bidirectional communication between researchers and lay audiences who are interested in breast cancer research. This work is supported in part by the Community Outreach and Engagement Core (COEC) in the UNC Center for Environmental Health and Susceptibility (CEHS).

Key Successes/Outcomes:

The BCERP Community Partner has assembled an active CAC, with stakeholders from state and local public health agencies, media, advocacy groups, survivors and the African American community, to advise on effective strategies for reaching target audiences with public health messages. This team of fourteen meets periodically with UNC BCERP researchers and outreach staff to provide feedback on educational materials and strategies used to relay messages about breast cancer risk to women. Through a series of focus groups, conducted with 57 African American women ages 18 to 49, the BCERP Community Partner is learning about premenopausal African American women's knowledge, attitudes and beliefs about breast cancer. Furthermore, interviews were conducted with 34 healthcare and public health professionals, to understand what they need to help them convey breast health and breast cancer information to women. We have also partnered with the Wake County Health and Human Services' "Educate Our Women" program to pilot test educational materials with 22 lay health advisors. Evaluation results show that all of the participants gained knowledge about environmental influences on breast cancer risk, and over 85% indicated that they would

use the activities designed for low literacy audiences with their constituents, some of whom were Latino populations.

PEPH Program(s):

Breast Cancer and Environment Research Program

Environmental Determinants of Airway Disease in Children Denver Children's Environmental Health Center

Key Personnel (Point of Contact) and Institution:

Lisa Cicutto
Krysten Crews
Stan Szefler
National Jewish Health

Brief Description:

The priority of our Community Advisory Board is to target youth through schools by integrating air quality and health within the state's curriculum. The overall goal is to prepare Colorado youth to become critical thinkers capable of making informed decisions and taking actions about their environment and health. To assist educators a resource of "best" lesson plans and supports was developed.

Key Successes/Outcomes:

Several steps were completed to develop a resource of best materials based on solid evidence and current pedagogical principles. Since several resources exist, an additional purpose was to avoid duplication and reinvention of resources while simultaneously creating an accessible resource. Developmental steps included: performing a needs assessment and environmental scan, retrieving and reviewing existing resources to identify "best" lesson plans, blueprinting lesson plans to Colorado curriculum frameworks, and teacher reviewing and rating of the best available lesson plans.

The initial search identified thousands of resources related to air, air quality/pollution and/or health. After additional refinement of search terms and initial review of identified resources, 21 programs consisting of 192 resources underwent a second level review. This second level review was completed against identified criteria for a "best" resource as defined through the needs assessment and environmental scan. Examples of criteria used included: inquiry based, critical thinking development, easy to use, accuracy, and links air quality and health. Following the second level of review, 17 lesson plans were identified as ready to use, 39 resources identified as needing additional work and 136 resources were identified as not useful. Of the 17 ready to use lesson plans, 8 were suitable for 6th to 8th grades, 5 were suitable for K-5th grades and 4 were suitable for 9th-12th grades. The most common areas of foci for resources were air pollution in general and the Air Quality Index. The most common reasons for resources being identified as not useful were the lack of a link between air quality and health and the lack of an inquiry based framework.

Several ready to use lesson plans exist for educators of grades K-12 to prepare future generations to make informed decisions and serve as environmental stewards related to air quality and health. To make these lesson plans and resources easily accessible to educators a website was developed to make these resources available. This one stop place for educators is known as Clean Air Projects (CAP)- Educational Resources Linking Air Quality and Health and is located at www.capk-12.org. Next steps include assessing the usability

of the website, working with local partners to provide continuing professional development opportunities related to teaching within an inquiry based and critical thinking paradigm, and collaborating with educators for implementation of resources.

Materials/Products Title	Format (Brochure, Factsheet, DVD/Video, Website, etc.)	Willing to share?	Product in the PEPH Resource Center?
Clean Air Projects (CAP) -Educational Resources	website	Yes	No, but hopefully it
Linking Air Quality and Health			will be soon.

PEPH Program(s):

Centers for Children's Environmental Health & Disease

Environmental Justice Workshop

Key Personnel (Point of Contact) and Institution:

Lori Easterlin, Workshop Project Coordinator Katie Mikush, Workshop Project Assistant Gretchen Kroeger, Community Education Coordinator Charlotte Clark, RTC Director

Partners/Key Personnel and Institutions:

Johnson C. Smith University

Mecklenberg County Public Schools (specific school TBD)

City of Charlotte Community Organizations (TBD)

Brief Description:

The Duke SRP Research Translation Core is developing an intensive, week-long Environmental Justice Workshop to be piloted during the summer of 2012. The workshop is designed to provide minority college students attending Historically Black Colleges and Universities (HBCUs), North Carolina public school educators, and community stakeholders with an introductory training on Superfund-related topics surrounding environmental justice. The goals of this workshop are as follows:

- Recruit minorities into the field of environmental health;
- Develop an environmental health/justice curriculum;
- Establish partnerships between Duke University, HBCUs in North Carolina, and the stakeholders within those communities; communicate research within Duke's SRC to a wide audience; and,
- Form environmental health/justice networks across the state.
- The format of the workshop will include multiple sessions focusing on an environmental justice topic

 which in the pilot year of the workshop will be environmental justice and farmworkers as well as field experiences. Furthermore, interdisciplinary educator teams from one school will meet to develop and draft an environmental curriculum for implementation within their school.

Key Successes/Outcomes:

We anticipate our outcomes will include the following:

- Groups of students, educators, and community stakeholders returning for a second workshop,
- An interdisciplinary environmental justice curriculum developed by teams of educators,
- Increased interest in environmental health/justice among minority collegians and educators.

PEPH Program(s):

Superfund Research Program

Environmental Microbial and Mammalian Biomolecular Responses to AhR Ligands

Key Personnel (Point of Contact) and Institution:

Brad L. Upham, Michigan State University

Partners/Key Personnel and Institutions:

Kaminski, Norbert, Michigan State University Hasham, Syed A; Michigan State University Cole, James R., Michigan State University

Brief Description:

The Michigan State University (MSU) Superfund Research Program (SRP) center consists of seven research projects and five support cores (administrative, research translation, community engagement, computational modeling, and molecular analyses). The research theme for the MSU-SRP center is focused on the biochemical mechanisms of dioxin and dioxin-like compounds on human health effects and reducing human exposure to these environmental contaminants. The biomedical research components involve determining the effects of dioxin on the immune system, lipid metabolism in the liver, mitochondrial dysfunction, gut microbiome-host interactions, and the development of computational dose-response models on population variability. The non-biomedical projects involve the development of geosorbant matrices to slow or immobilize their movement in the environment, and the characterization of microbial systems capable of degrading dioxin and dioxin-like compounds. The Research Translation Core (RTC) plays an important role in bridging knowledge from the research and computational cores with the professional community. Bidirectional partnerships with the state of Michigan and the US EPA are vital components of this process. The RTC is also involved in organizing professional workshops, developing data repositories for molecular biologists, establishing educational programs for medical students, educating and assisting the research cores on technology transfer, patents and intellectual property rights, and assisting the Community Engagement Core in their bidirectional efforts in engaging our communities affected by dioxin and dioxinlike.

Key Successes/Outcomes:

The RTC has been instrumental in:

- Developing a "Molecular Biology Tools Repository", which was designed to identify biodegradation genes and detecting biodegradative activity of microorganisms in their natural environment.
- Assisted the computational core in organizing a workshop to train scientists, particularly SRPtrainees, in computational systems biology.
- Developing bidirectional partnerships with the Michigan departments of "Environmental Quality" and Agriculture.
- Developing a bidirectional partnership with US EPA-region 5.

- Fostering a joint research effort between the State of Michigan and our research core determining environmental fate of dioxins in sediments.
- Organizing workshops on the biomedical effects and environmental fate of dioxin and dioxin-like compounds.
 - Superfund symposium on "Epigenetic toxicant-induced signal transduction and Altered Cell-Cell Communication", Oct. 17-29, 1999, Towsley Center, University of Michigan, Ann Arbor, Michigan.
 - Superfund workshop on "The NAS and WHO on Dioxin-like compounds: International Implications and potential Impact". Sept. 19th, 2007, Michigan State University.
 - Superfund Symposium: Dioxin Toxicity: Mechanisms, Models, & Potential Health Risks". Oct.
 20-21, 2008, Michigan State University, East Lansing, Mi.
 - Superfund conference, "Health Effects of Low Level Radiation Exposure", Michigan State University, Sept. 30, 2008.
 - Superfund Workshop on "Health Consequences from Xenobiotic-Gut Microbiome-Host Interactions". Nov. 17-18, 2010. NIEHS campus, Research Triangle Park, N.C.

Materials/Products Title	Format (Brochure, Factsheet,	Willing to share?	Product in the PEPH
	DVD/Video, Website, etc.)		Resource Center?
FGPipeline	website	yes	no
(http://fungene.cme.msu.edu/FunGenePipeline/			

PEPH Program(s):

Superfund Research Program

Ethical and Legal Challenges in Communicating Individual Biomonitoring and Personal Exposure Results to Study Participants: Guidance for Researchers and Institutional Review Boards

Key Personnel (Point of Contact) and Institution:

Julia Brody, PI, Silent Spring Institute

Partners/Key Personnel and Institutions:

Phil Brown, Co-PI, Brown University
Rachel Morello-Frosch, Co-PI, University of California - Berkeley
Wendy Jacobs, Consultant, Harvard University
Dianne Quigley, Consultant, Brown University
Ruthann Rudel, Co-Investigator, Silent Spring Institute

Brief Description:

Biomonitoring and personal exposure data are an essential part of environmental health research, which can be used to track exposures and identify links to health. The values of community based participatory research (CBPR) encourage researchers to report these individual exposure results back to study participants and communities to build public trust, foster community action, and respect the autonomy of the research participants. However, newer technologies provide biomonitoring data on chemicals that are less familiar and do not have established health guidelines. For these emerging contaminants, uncertainty about the interpretation of personal exposure results raises questions about whether and how to responsibly and effectively report individual results to study participants. Our team, which includes researchers from Silent Spring Institute, Brown University, the University of California - Berkeley, and Harvard University, has had a pioneering role in expanding the discussion on report-back of personal exposure results, building partnerships between researchers and community based organizations, and integrating the values of CBPR into personal exposure research. Through this grant, we are investigating the experiences, values, and attitudes of study participants in four case studies in which participants chose to receive their individual results for chemicals. These four studies encompass government, academic, and advocacy research. We are also examining the perspectives of institutional review board (IRB) members, researchers, clinicians, and legal experts in focus groups and through legal research. This research will be used to develop and disseminate guidelines for ethical, effective, and logistically feasible report-back protocols for reporting personal exposure results to participants when the health implications are unclear and the effectiveness of exposure reduction strategies is uncertain.

Key Successes/Outcomes:

1. Our project team hosted a workshop at Harvard Law School in September 2010 that brought together forty-four ethicists, environmental health researchers, lawyers, clinicians, study participants, health advocates, IRB officials and others to discuss the ethical and legal issues related

- to reporting individual results to participants in biomonitoring and personal exposure studies. A manuscript reporting workshop findings is in preparation.
- 2. Based on legal research conducted under this grant, we produced a white paper that was presented during the report-back workshop. Preliminary findings suggest that it is unlikely that household exposure study participants would be required by law to disclose results, but poorly defined terms and lack of precedent might lead to different interpretations in the future. The paper, which is being prepared for publication, concluded that informed consent procedures should alert participants to potential legal obligations and new legal protections may also be needed in the future.
- 3. Our PI Julia Brody moderated a panel on the ethical and legal issues involved in reporting individual exposure results at the AAS Annual Meeting (Feb. 2011). The panel included CO-PI Rachel Morello-Frosch, Sharyle Patton, Director of the Biomonitoring Resource Center at Commonweal, and Gwen Collman, Director of the NIEHS Division of Extramural Research & Training.
- 4. Co-PI Morello-Frosch presented at the Scientific Guidance Panel of the California Biomonitoring Program in April 2011. She is working with the Chemicals in Our Bodies pilot study of the California Biomonitoring Program to conduct usability testing for reporting on over 100 chemicals of interest found in blood and urine samples from California mothers and their babies.
- 5. Our team has advised several other biomonitoring and personal exposure studies in building community collaborations, working with IRBs, and reporting exposure results.

Materials/Products Title	Format (Brochure,	Willing to share?	Product in the
	Factsheet, DVD/Video,		PEPH Resource
	Website, etc.)		Center?
"Legal Implications of Reporting	White paper	preparing for publication	
Household Exposure Study Results to			
Participants"			
"Measuring the Success of	Journal article	in press, Environmental Health Perspectives	
Community Science: The Northern			
California Household Exposure			
Study"			
"Institutional review board	Journal article	http://www.ehjournal.net/content/pdf/1476-	
challenges related to community-		069x-9-39.pdf	
based participatory research on			
human exposure to environmental			
toxins: A case study"			

PEPH Program(s):

Research Ethics

From Advancing Science to Ensuring Prevention (FASTEP) Alliance; Pregnancy Exposures to Environmental Contaminants Formative Center (PEEC)

Key Personnel (Point of Contact) and Institution:

Jessica Trowbridge, MPH

University of California San Francisco, Department of Obstetrics and Gynecology, Program on Reproductive Health and the Envrionment

Partners/Key Personnel and Institutions:

Tracey J. Woodruff PhD (PI) - University of California San Francisco Naomi Stotland MD- University of California San Francisco Patrice Sutton, MPH - University of California San Francisco FASTEP alliance- University of California San Francisco

Brief Description:

The Goal of the Program on Reproductive Health and the Environment (PRHE), a program of the University of California San Francisco, and the Pregnancy Exposures to Environmental Contaminants Formative Center is to promote healthier environments for human development, the foundation for future child and adult health, through prevention of harmful exposures to environmental chemicals.

To this end, in 2007 PRHE formed and continues to lead the From Advancing Science to Ensuring Prevention (FASTEP) Alliance, a multi-disciplinary group of clinical and scientific experts and advocates in the fields of reproductive, occupational, environmental and pediatric medicine, public health, and toxicology representing academic, governmental and non-governmental organizations. The goal of the FASTEP Alliance is to secure each and everyone's right to optimal reproductive health by fostering environments that prevent exposure to potential reproductive toxicants and provides the nutritive and social sustenance necessary for healthy pregnancies, children, adults, and future generations. See: http://prhe.ucsf.edu/prhe/clinical/index.html#fastep

Key Successes/Outcomes:

- Engaged key leaders in the field of reproductive health, including the American Congress of Obstetricians and Gynecology;
- Developed and published the Navigation Guide, the first methodology to translate environmental health science into practical recommendations for prevention using an evidence-based medicine framework;
- Partnered with the U.S. Environmental Protection Agency (EPA) to apply the Navigation Guide to a
 case study of the relationship between perfluorooctanoic acid (PFOA) and fetal growth to establish
 "proof of concept" of the methodology;

- Disseminated the science linking toxic chemicals to reproductive and developmental health widely
 in clinical and policy spheres. To reach reproductive health professionals, their institutions, patients,
 and decision-makers, we authored four peer-reviewed articles, three textbook chapters, and a white
 paper targeted to obstetricians and gynecologists that translate reproductive environmental health
 science into clinical guidance and policy recommendations (see materials below for select
 publications) developed and disseminated 3 patient centered brochures and a clinician's white
 paper; and made scores of presentations; and
- Gathered the first empirical evidence about the knowledge, attitudes and practices of obstetricians across the U.S. regarding environmental toxics.

Materials/Products Title	Format (Brochure, Factsheet,	Willing to share?	Product in the PEPH
	DVD/Video, Website, etc.)		Resource Center?
Reproductive health and the industrialized food	Academic Journal	yes	no
system: A point of intervention for health policy			
Reproductive environmental health, in Current	Academic Journal	yes	no
Opinions in ObGyn			
Toxic Matters low literacy English and Spanish	Brochure	yes	no
Work matters brochure	brochure	yes	no

PEPH Program(s):

Centers for Children's Environmental Health & Disease Formative Center

GC-HARMS: Gulf Coast Health Alliance: Health Risks Related to the Macondo Spill

Key Personnel (Point of Contact) and Institution:

Kees Elferink, PhD Sharon Croisant, PhD

Partners/Key Personnel and Institutions:

University of Texas Medical Branch at Galveston, University of Pennsylvania, Louisiana State University Health Sciences Center, Louisiana State University, Texas A&M at Galveston, Louisiana Environmental Action Network (Baton Rouge, LA), Center for Environmental & Economic Justice (Gulfport, MS), Mississippi Coalition for Vietnamese-American Fisherfolk & Families (Gulfport, MS), United Houma Nation (Houma, LA), South Bay Communities Alliance (Coden, AL), Zion Travelers Cooperative Center (Phoenix, LA), Bayou Interfaith Shared Community Organizing (Terrebonne/Lafourche/Jefferson Parishes, LA)

Brief Description:

The University of Texas Medical Branch at Galveston (UTMB) became involved in the early response to the Deepwater Horizon explosion and subsequent oil spill largely due to ongoing relationships established with coastal communities on various projects in the aftermaths of Hurricanes Katrina, Rita, and Ike. A series of meetings with over two dozen community groups in the early days of the spill already revealed deep concerns over the lack of knowledge regarding the safety of petrogenic polycyclic hydrocarbons (PAHs) in the oil, its disposition due to the use of dispersants, and persistent uncertainty over their long-term effects on the food web and their human health effects. This is clearly magnified by the fact that many coastal families not only subsist on Gulf seafood but also rely on its harvest for financial support. These concerns drove development of a consortium and subsequently, a U19 proposal utilizing a Community-Based Participatory Research approach focused upon gaining an understanding of the long-term health effects attributable to the Gulf oil spill. Our study, which was recently funded by NIEHS, will concentrate on the contamination of Gulf finfish and shellfish and the potential health effects in humans consuming tainted seafood.

The overall theme of the GC-HARMS consortium is to understand and communicate the human health risks of exposure to potentially hazardous food-borne petrogenic PAH. Our goals developed in collaboration with our community partners are to, 1) assess PAH contamination of Gulf seafood caught by the subsistence fishing communities for personal consumption and commercial sale, 2) determine the toxicity of petrogenic PAH, 3) evaluate exposure and health outcomes in a longitudinal study involving the community partners measuring multiple stressor biomarkers, and 4) disseminate the findings to our community stakeholders. Our program overall seeks to address the impact of the DWH Disaster on health, illness, and quality of life for the general population residing in the Gulf Coast region, and compile the scientific evidence needed to strengthen the resiliency of vulnerable populations along the Gulf Coast, enabling them to prepare for and recover from the effects of the man-made (e.g., oil spill) and natural (e.g., hurricanes) disasters. Our interest

in ascertaining the current and future safety of the seafood upon which the coastal fishing communities rely directly addresses the issue of community vulnerability and resiliency following the DWH Disaster.

Key Successes/Outcomes:

The impacts of the GC-HARMS consortium begin with the project's inception. As a Community-Based Participatory Research (CBPR) project, the process itself represents the ethos of translational and transformational science as the study foci emerged from concerns of the study communities themselves, generating a project that began at the "curbside," has since led to development of both basic and clinical science research projects, results of which will be used to drive dissemination of information as well as community-based interventions.

From the community-identified issues to the multi-disciplinary, multi-institutional basic and clinical investigator team, the birth and development of this study is rooted firmly in bidirectional communication among communities, clinicians, and researchers. Noteworthy impacts include:

- Community members shaped the issues that are to be addressed by the research and their involvement continues as team members from initial sample collection to communication of the results.
- Community input has transformed the study design:
 - community organizations have aided the research team by locating local fishermen who will be trained to do the sampling, from the commercial catches to the by-catch, which they frequently consume.
 - Community partners are looking at the way seafood is distributed in these subsistence communities, which is frequently by barter, often through extended families.
- The multi-disciplinary team includes three universities and three community organizations spanning the Gulf Coast.
- Also noteworthy is the collaboration between the NIEHS Center in Environmental Toxicology at UTMB and the Center of Excellence in Environmental Toxicology at the University of Pennsylvania.
 Both Centers bring essential expertise and resources that make the GC-HARMS research objectives possible.
- Petrogenic PAHs that will be measured have not been examined much to date from a toxicological
 or human health perspective and will contribute to research findings but potentially inform seafood
 consumption regionally resulting in a broad, varied communication strategy targeting multiple
 audiences.
- In response to the concerns of the community, the investigation includes a study of the psychosocial fallout from spill.
- Equally important, translation reaches beyond potential negative impacts: researchers will also
 evaluate the resilience of the study communities, seeking factors that have helped or hindered their
 responses to the oil spill and the series of Gulf Coast hurricanes that preceded it and looking for
 ways to improve resilience in the face of possible future natural or man-made disasters.

• Finally, GC-HARMS includes an outreach component aimed at informing Gulf Coast communities of its discoveries and other relevant health-related research. In all, seven Gulf Coast organizations are key partners in translating study findings to the affected communities through a variety of channels, across the region.

Materials/Products Title	Format (Brochure, Factsheet,	Willing to share?	Product in the PEPH
	DVD/Video, Website, etc.)		Resource Center?
To be developed:	outreach materials, fish	Yes	
	consumption guideline based		
	upon data, videos, PSAs, etc.		

PEPH Program(s):

EHS Core Centers U19

Green Cleaning: Exposure Characterization and Adoption Process Among Custodians

Key Personnel (Point of Contact) and Institution:

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Occupational Health Center and Dept. of Community Medicine
UConn Health Center

Partners/Key Personnel and Institutions:

Tim Morse, PhD, CPE University of Connecticut Health Center
Nancy Simcox, MS, University of Washington
Sara Wakai, PhD, University of Connecticut Health Center
Paula Schenck, MPH, University of Connecticut Health Center
Loyola Welsh, JD, Connecticut Employees Union Independent
Jeff Janusonis, Connecticut Council on Occupational Safety and Health

Brief Description:

The purpose of the study is to find ways workers and workplaces choose to adopt cleaning products that have lower health and environmental impact, and what obstacles they face in shifting over to using them. The study is investigating how frequently custodians develop asthma and skin disorders, which might be linked to cleaners, and what the current exposures to a group of specific chemicals (phthalates) found in current cleaning and household products might be in custodians. The study is a collaborative approach that helps to link community partners and UCHC researchers in identifying and developing solutions to problems in work health and safety. Information from this study will be used to develop a best-practices training program to increase the proper use of safer alternatives to cleaning chemicals. The study is funded by a federal grant from the National Institute for Occupational Safety and Health (NIOSH).

Participants for this study were state and contract workers from six state agencies. The research team held 10 focus groups with 64 participants, including three for English as a Second Language (ESL) custodians and one with facilities and occupational health staff. Data were transcribed and analyzed using Atlas TI qualitative analysis software. Key themes included feedback mechanisms for the use of green cleaners, training, safety awareness, equipment/dilution, disinfectant use, health effects, language issues, work related pressure to do a job well, and use of cleaners. In addition, 327 state and contract employees who use cleaners completed the Green Cleaning and Health Survey, an anonymous survey focusing on workers' work, health, cleaners used, cleaning tasks, and satisfaction with cleaning products. Collection of urine specimens in relation to phthalate bio-burden is complete with 68 participants. Collection consisted of 4 specimens distributed pre- and post-shift based on protocols developed with collaborators at Harvard University.

Key Successes/Outcomes:

Key successes and outcomes of this study include:

- 1. Development of an advisory board consisting of chief stewards. The board meets monthly and members help build a partnership between the academic/research and union components of the project.
- 2. Development of best practices for green cleaning animal care labs
- 3. Development of best practices for green cleaning kitchens
- 4. Consultation for workers and administration at one state agency to assist in transitioning to green cleaners. Offered training on products, equipment and methods to improve the effectiveness of green cleaners.
- 5. Organized annual meetings for academic, union, workers and community partners to provide project update, and design next phases of project.

Materials/Products Title	Format (Brochure, Factsheet, DVD/Video, Website, etc.)	Willing to share?	Product in the PEPH Resource Center?
Green Cleaning Poster	Poster	Yes	No
http://oehc.uchc.edu/greencleaning.asp	website	Yes	No

PEPH Program(s):

Research to Action

Hazardous Materials Worker Health and Safety Training (U45) Cooperative Agreement

Key Personnel (Point of Contact) and Institution:

Audrey Gotsch, DrPH, MCHES, UMDNJ-School of Public Health (gotschar@umdnj.edu)

Partners/Key Personnel and Institutions:

Mitchel Rosen, MS, and Koshy Koshy, PhD, Office Of Public Health Practice, UMDNJ-School of Public Health Paul Kostyniak, PhD, and Joseph Syracuse, PhD, Toxicology Research Center, University at Buffalo Javier Saracho, MSEd, Institute of Environmental Education, School of Environmental Affairs, Universidad Metropolitana

Joel Shufro, PhD, New York Committee on Occupational Safety and Health

Jack Caravanos, DrPH, CIH, and Andrew Burgie, MS, Center for Occupational and Environmental Health, CUNY School of Public Health at Hunter College

Donald Killinger, MS, New York City District Council of Carpenters

Theodore Cashel, Hazmat Response Unit, Special Operations Section, New Jersey State Police

Brief Description:

Established in 1987, the NJ/NY Hazardous Materials Worker Training Center (NJ/NY Center) is supported by Award Number U45ES006179 from the National Institute of Environmental Health Sciences. The long-term goal of the NJ/NY Center is to prevent work related injuries and disease due to the potential hazards and exposures that may occur during hazardous waste operations and emergency response. To achieve this goal, the NJ/NY Center provides hands-on training for workers that will enable them to protect themselves and their communities during hazardous waste operations and emergency response and to also understand their worker rights while working in the hazardous materials industry. The Center members have developed model worker safety and health training programs and currently deliver training in three program areas: the Hazardous Waste Worker Training Program that is designed for workers engaged in hazardous waste removal, containment or chemical emergency response; the Minority Worker Training Program that provides training for disadvantaged minority youth to prepare them for employment opportunities in environmental restoration and hazardous materials; and the Hazmat Disaster Preparedness Training Program to increase the number of workers who are prepared to respond to future terrorist attacks and natural disasters. With Center members based in New Jersey, New York and Puerto Rico, the Center has developed a network of collaborators to meet the training needs of a broad range of public and private sector workers in this Region, both union and non-union employes, that includes clean-up workers, emergency responders, transportation workers, and healthcare workers. The Center also provides job training skills to un- or under-employed individuals. While the primary focus of the Center is to provide training for workers in Region II, each Center member also provides training outside of this Region when requested. All training programs are grounded in 29 CFR 1910.120, meeting the requirements of each training section of the hazardous waste and emergency response requirements. The training programs are also consistent with the occupational safety and health objectives of Healthy People 2020 to reduce deaths

from work-related injuries and to reduce nonfatal work-related injuries. Copies of training curricula are available online through the National Clearinghouse for Worker Safety and Health Training at: http://tools.niehs.nih.gov/wetp/public/. The Center also receives outstanding support from a 15-member Advisory Board, chaired by Dr. Bernard D. Goldstein, that includes representatives of unions, government, academia, community-based organizations and the hazardous waste industry.

Key Successes/Outcomes:

Although the hazardous materials industry in Region II is actively conducting clean-up, transportation, treatment, storage and disposal operations, Region II still has numerous hazardous waste sites where cleanup is either planned or in progress. To prepare workers for employment to address these issues, the NJ/NY Hazardous Materials Worker Training Center has provided hazardous materials training courses to over 350,000 workers since 1987. Following participation in the training program, the Center has documented that its trainees have utilized their new skills to ensure that they remain safe while working. During key informant interviews, workers have identified that the training received through the Center provided valuable skills that enabled them to work safely at their job sites. Through the interviews, workers have identified that the ability to recognize and control hazards at their work site was the most important information obtained during the training. Additionally, they stated that the hands-on training with personal protective equipment enabled them to make essential decisions when selecting the appropriate level of protection on the job. The training also enabled them to locate jobs in the environmental industry. For example, following participation in the 16-week Minority Worker Training Program, 80% of the trainees have consistently secured employment with many of the graduates receiving salaries above \$24/hour. The Center has also been effective in identifying and securing funding from other sources to increase the number of trainees who could be sponsored by the Center to participate in the Minority Worker Training Program. In addition, the Minority Worker Training Program at this Center was recently cited in a report by the Aspen Institute, one of the leading think tanks on workforce development, as a model program for construction training serving disadvantaged communities.

The NJ/NY Center actively pursues opportunities to meet the training needs of workers throughout Region II. With training providers in New Jersey, New York City, Western New York, and Puerto Rico, the Center members offer training opportunities that are tailored to address local health and safety concerns and are accessible to employees. Additionally, through extensive outreach efforts the Center reaches multiple sectors of the Region's workforce, including public and private sector employees as well as union and non-union employees.

Materials/Products Title	Format (Brochure,	Willing to	Product in the PEPH Resource Center?
	Factsheet, DVD/Video,	share?	
	Website, etc.)		
Hazardous Waste Worker Training	30 Manuals	Yes	All Manuals are Available at the
Curricula			National Clearinghouse Website at:
			http://tools.niehs.nih.gov/wetp/public/.
Minority Worker Training Curricula	3 Manuals	Yes	All Manuals are Available at the
			National Clearinghouse Website at:
			http://tools.niehs.nih.gov/wetp/public/.
Hazmat Disaster Preparedness Training	5 Manuals	Yes	All Manuals are Available at the
Curricula			National Clearinghouse Website at:
			http://tools.niehs.nih.gov/wetp/public/.

PEPH Program(s):

Worker Education and Training Program

Impact of Traffic-Related Particles on Asthma for Students in an Urban School District

Key Personnel (Point of Contact) and Institution:

Patrick Ryan, Cincinnati Children's Hospital Medical Center

Partners/Key Personnel and Institutions:

Cynthia Eghbalnia, Cincinnati Public Schools Ken Sharkey, Cincinnati Health Department

Brief Description:

The objectives of this project are to: 1)Determine if children are exposed to increased levels of traffic-related particulate matter (PM) (including ultrafine particles and diesel-related elements) at school compared to ambient levels in the communities where the children reside, 2) Develop and implement a community-driven Anti-Idling Campaign aimed at reducing children's exposure to traffic-related air pollution during school hours, and 3) Evaluate the effectiveness of the research partnership and community-driven Anti-Idling Campaign by assessing the reduction of exposure at schools and the impact on the health of children with asthma who attend these schools. The partnership forged between researchers at Cincinnati Children's Hospital Medical Center / University of Cincinnati, Cincinnati Health Department (CHD), and the Cincinnati Public Schools (CPS) has made our over-arching goals possible, and together we have executed data collection including ambient air monitoring, subject recruitment, medical assessments, and extensive community outreach including a community-led anti-idling campaign developed and implemented with the goal of reducing children's exposure to traffic-related air pollution during school hours.

Key Successes/Outcomes:

Completed pre and post intervention ambient air monitoring at four participating schools and communities

- Established baseline pre-intervention air quality at schools and communities
- Identified elevated concentrations of traffic related particles at school with greatest number of buses compared to community site
- Found outdoor air quality at schools to be associated with school bus traffic
- Post anti-idling campaign, particles associated with diesel exhaust were significantly reduced at school with greatest number of buses
- Enrolled cohort of asthmatic children attending participating schools
- Completed pre and post intervention health assessments on participating children
- Established baseline pre-intervention health status of enrolled children
- Anti-idling campaign
- Educational program for school bus drivers including development of exposure scenario and antiidling video
- 397 bus drivers signed anti-idling pledge
- Teacher, parent, student education including school-wide air quality assemblies, parent pledge drive

- 21%-42% of pledge cards returned by parents school-wide in participating schools
- Monitoring of school bus idling demonstrated significant reduction in idling time after campaign (avg. 397 seconds reduced to 78 seconds)
- Online training video developed and viewed by approximately 300 CPS administrators and staff
- Significant improvement in idling knowledge post video
- Modified policy language to further reduce idling in CPS bus loading/unloading areas

Educational Materials

- Indoor Environmental Quality Plan developed and implemented
- Web site development for resources and sustainability

Materials/Products Title	Format (Brochure, Factsheet,	Willing to share?	Product in the PEPH
	DVD/Video, Website, etc.)		Resource Center?
School bus driver video	Video	yes	
School bus driver Power point with voice over	Power point/voice over	yes	
Pre and post tests for school bus drivers	Word document	yes	Can be linked
Campaign Templates (i.e., information	Word Document	yes	Can be linked
brochures, school instructions, monitoring			
packets, etc)			
Cincinnati Anti-Idling Campaign (CAIC) Video	Video	Yes	Can be linked

PEPH Program(s):

Research to Action

Improving Risk Communication To Women Enrolled in a Birth Cohort Study of Well Water Users in New Hampshire

Key Personnel (Point of Contact) and Institution:

Vicki Sayarath, MPH, RD, Dartmouth Medical School Carolyn Murray, MD, MPH, The Dartmouth Institute for Health Policy and Clinical Practice (TDI) and Dartmouth Medical School

Partners/Key Personnel and Institutions:

Dartmouth Hitchcock Medical Center and Concord Hospital affiliated Obstetrical practices New Hampshire Department of Environmental Services

Brief Description:

The State of New Hampshire is a rural state where 40% of the population rely on private wells for their primary source of drinking water. About 1 in 5 to 10 wells drilled in New Hampshire have been found to contain naturally occurring arsenic (As) at or above the EPA Maximum Contaminant Level (MCL) of 10 parts per billion (ppb). We are evaluating the current risk communication materials provided to pregnant women, ages 18-45 years, enrolled in a birth cohort study in New Hampshire (The New Hampshire Birth Cohort Study - NHBCS). These materials are taken from existing informational publications from the NH Department of Environmental Services and the Agency for Toxic Substances and Disease Registry (ATSDR) and are included along with the results of well water testing conducted as part of the study. These results specify the level of As found in each woman's well water sample. The materials explain how the levels compare with the national level of 10 ppb and provide information about risk reduction measures, such as installation of filtration systems. Approximately 15% of Birth Cohort participants have well water As levels that exceed the EPA MCL, but we do not know how participants have responded to the information about these findings and what they have done in terms of addressing their As exposure.

Our goals for this project are to: 1) determine what actions, if any, did current birth cohort members with elevated As in their wells pursue to reduce exposure to As; 2) to identify the environmental risk information needs and preferred information channels of NHBCS participants take in response to the current risk information provided; 3) use this information to improve the quality of exposure risk information provided to study participants; and 4) evaluate the effectiveness of revised risk information as reflected in participants' subsequent actions to reduce exposure to well water arsenic.

Key Successes/Outcomes:

Our anticipated successes and outcomes for this project are to:

- 1. better understand responses of our study participants to existing risk communication materials related to As in well water;
- 2. engage participants in the development of effective risk communication materials

3. learn what risk communication strategies are most effective in promoting risk reduction behaviors/measures to reduce exposure to well water arsenic in a population of women of child-bearing age.

Materials/Products Title	Format (Brochure, Factsheet, DVD/Video, Website, etc.)	Willing to share?	Product in the PEPH Resource Center?
To be developed	To be determined	Yes	Will submit once developed

PEPH Program(s):

Centers for Children's Environmental Health & Disease

Integrating Environmental Health-Based Biotechnology into STEM Teaching

Key Personnel (Point of Contact) and Institution:

Mary O. Dereski, Ph.D.
Associate Professor
Institute of Environmental Health Sciences
Department of Family Medicine and Public Health Sciences
Wayne State University

Partners/Key Personnel and Institutions:

Nonye Alozie, Ph.D.
Institute of Environmental Health Sciences
David Grueber, Ph.D.
College of Education
Wayne State University

Brief Description:

Two Environmental Health-Based Biotechnology STEM Summer Institutes (2010 and 2011) were given to teachers from the metropolitan Detroit area. In addition, biotechnology techniques and environmental health topics were integrated into two secondary education methods classes and a special topics class through the College of Education at Wayne State University. All teachers enrolled in these classes received an introduction to environmental health and to toxicants of major concern to the community in the surrounding geographic area (air pollution, soil contamination, lead poisoning, asthma triggers, etc.). Teachers were subsequently supported in their classrooms through purchase of biotechnology kits, small equipment loans, and staff support for ongoing school-based projects. Evaluation of the funded programs was carried out by the Wayne State University Center for Urban Studies, and continues currently through surveys sent to teachers who were enrolled in the various offerings. A supplement to the ARRA STEM grant was awarded and has been utilized to offer an independent study course to previously enrolled teachers and to assist and support connection of their students to community-based environmental stewardship projects.

Key Successes/Outcomes:

Teachers have been successful in integrating environmental health topics and biotechnology techniques into their classrooms. A few of the teachers and their students currently have begun to connect with community groups as well as city or township boards to express their environmental health concerns and to determine what if any changes can be made in the community.

PEPH Program(s):

ARRA Challenge Grant

Integrating Well Water Testing Recommendations into Rural Primary Care Practices in Northern New England

Key Personnel (Point of Contact) and Institution:

Carolyn Murray, MD, MPH
The Dartmouth Institute for Health Policy and Clinical Practice and Dartmouth Medical School
Vicki Sayareth, MPH, RD
Dartmouth Medical School
Margaret Karagas, PhD
Dartmouth Medical School

Partners/Key Personnel and Institutions:

Ardis Olson, MD Research Director, Dartmouth Primary Care Research Cooperative (Dartmouth CO-OP) New Hampshire Department of Environmental Services

Brief Description:

Public health departments and health care professional societies such as the American Academy of Pediatrics (AAP) recommend regular periodic well water testing for pathogens, chemicals and other contaminants to ensure the safety of drinking water but these recommendations are not routinely integrated into preventive health care services. In the northern New England states of New Hampshire, Vermont and Maine, residents that rely on private, unregulated water systems account for 30- 44% of the population. This same geographic area is known to have naturally occurring arsenic (As) levels in groundwater that can exceed the current EPA Maximum Contaminant Level (MCL) for drinking water of 10 parts per billion (PPB) in 10- 20% or more of wells, with significant geographic differences in these levels. While As is a known carcinogen, research is emerging about other health potential health effects, to which fetuses and children could be at greater risk. By partnering with a well established regional network of primary care practices, mostly located in rural communities with higher than average numbers of well water users, this project aims to:

- 1. integrate screening questions related to water source into the health care visit to identify patients who use private wells and have not had recent comprehensive water quality assessment;
- 2. provide patient education about the health risks of well water contamination with an emphasis on arsenic, because of the regional significance of this contaminant;
- 3. develop well water testing resources that primary care practices can use to increase the convenience of well water testing for their patients;
- provide appropriate educational resources and guidance to health care providers to increase their confidence in providing risk communication to their patients related to their patient's well water test results.

Key Successes/Outcomes:

Our anticipated outcomes are:

- 1. Demonstrate an increase in well water testing rates consistent with current public health and clinical guidelines.
- 2. Demonstrate increased health care provider knowledge of important health implications related to well water, in particular those related to arsenic,
- 3. Develop a replicable system for integrating well water testing into primary care health care settings.

PEPH Program(s):

Centers for Children's Environmental Health & Disease

Local Health Impacts of Land Application of Sewage Sludge

Key Personnel (Point of Contact) and Institution:

Steven B. Wing, University of North Carolina, Department of Epidemiology

Partners/Key Personnel and Institutions:

Michael Aitken, UNC, Environmental Sciences & Engineering Gary Grant, Concerned Citizens of Tillery Rob Hale, Virginia Institute of Marine Sciences David Leith, UNC, Environmental Sciences & Engineering Stephen Marshall, UNC, Epidemiology Marc Serre, UNC, Environmental Sciences & Engineering

Brief Description:

The goal of this community-based participatory research is to 1) measure air pollution and document odors in communities where treated sewage sludge from municipal waste water treatment plants is permitted to be spread on farmland, and 2) to examine whether exposure to sewage sludge affects the health of neighbors living within one mile of the sewage sludge land application sites.

To achieve our research goals, we used a cross-sectional door-to-door interviewer administered survey design. We recruited residents living near fields where sludges have been land-applied and residents living in similar rural areas where there has been no land application of sludge. The frequency of symptoms reported during the six months prior to the interview will be compared in the two groups. In addition, exposures of residents in areas where sludge has been applied recently will be quantified using information on distances from the application sites, wind speed and direction, quantities of sludge applied, and assessment of local vegetation for presence of marker analytes.

Supplemental to the cross-sectional survey and exposure assessment, we conducted in-depth semi-structured interviews with 34 individuals living within approximately one mile of sewage sludge land application sites in North Carolina, South Carolina and Virginia. These interviews provided detailed information about people's perceptions of the impact of sewage sludge on health and quality of life. The interview results also aided the development of the cross-sectional survey questionnaire.

There is also a community education and awareness component to our project. This includes a series of environmental health and justice meetings with communities where permitted sludge applications fields are located in North Carolina. These meetings are being organized among communities with whom the Concerned Citizens of Tillery (research partners) work to address a variety of environmental justice issues. We have developed an informational brochure to share at each community meeting. In addition, we prepare and present a map of permitted sludge application fields for each community, show educational videos, and discuss the issues.

Key Successes/Outcomes:

Analysis of the cross-sectional and exposure data is ongoing and it is unknown yet what the impacts may be. We published a paper critiquing the suitability of North Carolina state records for evaluating health impacts of sewage sludge. This paper was based on our experience collecting information from North Carolina state land application records to inform our research designs, data collection plans and analyses. It is our hope that the paper will prepare researchers for some of the difficulties of conducting epidemiological studies around sewage sludge application sites, and perhaps encourage the state to fill in the information gaps so that researchers can achieve more rigorous and informative health investigations related to sewage sludge exposure. (Keil A, Wing S, Lowman A. Suitability of public records for evaluating health effects of treated sewage sludge in North Carolina. NC Med J. 2011 Mar-Apr;72(2):98-104.)

We are preparing a manuscript for publication of the results of in-depth interviews with 34 individuals who live near sewage sludge application sites. We hope community members will be able to use this publication to educate local leaders about the health and environmental impacts of sewage sludge. Many neighbors of sludge application sites spoke about land application and the behavior of some sludge industry and governmental officials as an environmental injustice. A central aim of the paper is to discuss land application in the broader context of environmental justice. The article summarizes respondents' ideas for a more just land application practice, based on years of experience with land application in their neighborhoods. Public health officials and policy makers may consider respondents' ideas and adapt land application policies and regulatory practices to be more mindful of neighbors, and more protective of the surrounding environment. Furthermore, qualitative research is of increasing interest in environmental health science. The article may appeal to researchers seeking to employ qualitative methods to complement traditional exposure assessment and epidemiologic studies, or in place of these methods when circumstances limit their use.

We've held environmental health and justice meetings with North Carolina communities where permitted sludge application fields are located. Some community members told us that these meetings were the first time they got together as neighbors to discuss their common environmental health problems.

Materials/Products Title	Format (Brochure, Factsheet,	Willing to share?	Product in the PEPH
	DVD/Video, Website, etc.)		Resource Center?
Spreading the Word about Spreading Sludge	Brochure	Yes	No
Community Health Effects of Sewage Sludge			
Cartoon (a tool for study description, recruitment, and facilitating dialogue in community environmental health and justice meetings)	Powerpoint (cartoon)	Yes	No

PEPH Program(s):

Community Participation in Research

Mechanisms of Asthma—Dietary Interventions against Asthma Triggers

Key Personnel (Point of Contact) and Institution:

Gregory Diette, MD Johns Hopkins University
Patrick Breysse, PhD Johns Hopkins University

Partners/Key Personnel and Institutions:

Nadia Hansel, MD

Elizabeth Matsui, MD

Meredith McCormack, MD

Cheryl Anderson, PhD

Shyam Biswal, PhD

Roger Peng, MD

Cynthia Rand, PhD

Johns Hopkins University

Wayne Shreffler, MD Massachusetts General Hospital

Sangita Sharma, PhD University of Alberta

Brief Description:

The long-term goal of the ASTHMA-DIET Program is to understand how diet influences the asthmatic response to indoor and outdoor airborne pollutants and allergens, and to translate these findings into practical dietary strategies to improve pediatric asthma health. The ASTHMA-DIET Program's overall hypothesis is that a low anti-oxidant, pro-inflammatory diet impairs the capacity to respond to oxidative stressors thereby increasing susceptibility to pollutant and allergen exposures. The aims of the Center are focused on the mechanistic underpinnings of airway inflammation, oxidative stress and respiratory morbidity in predominantly African-American children with asthma, living in Baltimore inner city. These goals are addressed with an interdisciplinary program that encompasses one mechanistic and two clinicallyoriented research projects: Project 1 (Urban dietary effects on the asthmatic response to pollutants) is an observational field study using a panel design with repeated measures of pollutants, allergens, dietary intake and indicators of asthma morbidity, inflammation and oxidative stress. Project 2 (Dietary interventions in asthma treatment tests the capacity of 1) broccoli sprout supplementation and 2) a Mediterranean-style diet (OmniHeart) to ameliorate the response to inhaled allergens. Project 3 (Dissecting the diet-asthma relationship in mice models of asthma) uses an experimental approach in a murine model with a controlled diet, pollutant and allergen exposure-elucidating mechanisms by which dietary factors can modify susceptibility to pollutants and allergens. At the conclusion of this program the gains will be 1) having a better understanding of the mechanisms by which diet affects susceptibility of asthmatics to inhaled pollutants and allergens; 2) understanding how the composition of the inner city diet contributes to vulnerability to pollutants and allergens; and 3) whether certain specific dietary manipulations can improve the health of asthmatics by protecting against inflammation and oxidative stress.

PEPH Program(s):

Centers for Children's Environmental Health & Disease

Mercury Exposure from Fish Consumption in Subsistence Fishers in Rural Oklahoma

Key Personnel (Point of Contact) and Institution:

Laurel Schaider
Department of Environmental Health
Harvard School of Public Health

Partners/Key Personnel and Institutions:

L.E.A.D. Agency, Vinita, OK:
Earl Hatley, Rebecca Jim
Harvard School of Public Health, Boston, MA:
Ann Backus, James Shine, John Spengler
University of Oklahoma Health Sciences Center, Oklahoma City, OK:
Robert Lynch

Brief Description:

The goal of this project is to investigate mercury exposure among people who consume fish from the Grand Lake watershed in northeastern Oklahoma. We will collect hair samples as biomarkers of mercury exposure and questionnaires about fish consumption to determine whether residents of this community are exposed to high levels of mercury through their diet. We will also measure mercury concentrations in frequently-consumed fish species collected throughout the watershed. This project emphasizes community participation at all stages of the research, and will emphasize sharing the results with community members and developing ongoing education programs.

Key Successes/Outcomes:

The key success to date include:

- 1. completed the goal of 150 participants and achieved a multi-ethnic mix of participants;
- 2. have created the Food Frequency Questionnaire in two languages (English and Spanish);
- collaborated with the OK Department of Wildlife Conservation, Fisheries Division (to provide fish for analysis);
- 4. seven of the first 146 participants had methylmercury levels about the EPA cut off of 1ppm and five of those reported at a subsequent check that they changed their behavior and are eating less fish;
- 5. eight of the 40 who have finished the fifth and final FFQ reported changing their behavior to eating less fish;
- 6. the fish sampling is going well: we have 724 fish or which 646 are filet samples; 388 of those are from Grand Lake; we are on our way to collecting 30 samples of each species; and
- 7. we have sent out 358 report back letters to participants about their mercury exposure.

The public health message based on incomplete analysis is that there is not a high body burden of mercury in this population.

Also many participants have asked to be involved in the outreach and education component, and we will accommodate them by running focus groups to incorporate their ideas for developing outreach strategies. (See 2012 PEPH poster.)

Materials/Products Title	Format (Brochure, Factsheet,	Willing to share?	Product in the PEPH
	DVD/Video, Website, etc.)		Resource Center?
Food Frequency Questionnaire - English and	survey	Yes	No
Spanish			
Fish consumption log	log	Yes	No
Brochure	Brochure	Yes	No

PEPH Program(s):

Research to Action

Navajo Uranium Assessment and Kidney Health Project

Key Personnel (Point of Contact) and Institution:

Johnnye L. Lewis, Ph.D., Community Environmental Health Program, University of New Mexico HSC-COP Chris Shuey, MPH, Southwest Research and Information Center (SRIC)

Don Molony, M.D., University of Texas, Houston

Partners/ Key Personnel and Institutions:

In addition to the above, the project has strong partnerships with Navajo Area IHS, Navajo Division of Health, Navajo Environmental Protection Agency, USEPA Region 9, and 20 chapters of Eastern Agency of Navajo Nation that both requested the research and continued to work closely with the team throughout the last decade. Key individuals from those communities who have served as advisors include Jean Whitehorse, Ed Carlisle, Jay DeGroat, Thomas Manning, and Herbert Enrico. Key Navajo community staff, working through SRIC include Sandy Ramone, Sarah Henio-Adeky, Teddy Nez, and through UNM Jeremy DeGroat.

Brief Description:

The project began at the request of the health board representing 16 chapters in the Eastern Agency of Navajo Nation and expanded to include 4 adjacent chapters. The need was to determine if uranium in unregulated water sources was contributing to the kidney disease which occurred at 3-5X elevated prevalence than US population as a whole. The project has sampled water sources and used geospatial and Bayesian analyses to determine uranium exposures not only through use of unregulated water sources, but also from interactions with unremediated legacy mining and milling waste sites of which 1100 have been identified on Navajo Nation with more than 100 in the study area. Extensive survey information on land and water use, health history, and socio economic variables was collected during the initial phase of the project from 1304 individuals. Surveys were conducted by community researchers in Navajo and English. This phase was followed by clinical assessments conducted in collaboration with Navajo Area IHS and analysis of blood and urine samples to identify early markers of changes in kidney, vascular, and immune function. The project throughout interacted frequently with all participating chapters as well as with agencies and leadership of Navajo, state, and U.S. government to ensure the results of the research could inform policy on clean-up and exposure prevention. In addition, the project worked closely with clinicians to facilitate integration of the results into clinical care. Survey analyses are complete and a manuscript on those results has been submitted and is in review. Analysis of clinical and biomarker data is in progress. Water quality analyses have been completed for more than 130 wells within the region, and through collaborations with an interagency working group, more than 300 sources have been analyzed and posted using the projectdeveloped signage across the Navajo Nation.

Key Successes/ Outcomes:

- Identifying a dose-dependent increase in risk for hypertension and autoimmune disease in those living in proximity to unremediated waste sites.
- Identification of increased risk for kidney disease in those exposed during the active phase of mining and milling through activities such as laundering clothes of miners, growing up in mining camps, or working in mines, mills, or remediation activities.

- Development of safe water hauling guides with Navajo EPA Office of Drinking Water to reduce exposures.
- Sampling of 130 unreglated sources identified by participants as used for water hauling and identifying those with MCL exceedances -- nearly all were sampled for the first time.
- In collaboration with agency partners, identifying sources of concern, facillitating their testing, and compiling data to identify ~15% of unregulated sources with arsenic exceeding the MCL and ~ 8% with uranium exceeding the MCL.
- Through collaborations with Navajo and Federal agencies, posting of signs and maps developed by the project for consistent notification across all Navajo Chapters.
- Working with Navajo Area IHS to develop and implement a medical monitoring program open to all Navajo tribal members with concerns about exposures.
- Testifying regularly by invitation to state and national legislative committees to ensure the results were used to inform policies.
- Collaborating with an interagency working group responding to a congressional mandate for a 5year plan to address the legacy contamination. The project team led the outreach efforts to inform communities of the work in progress.
- Production of a 36 minute video, primarily in Navajo with English subtitles, to inform people of the water issues and concerns about not only uranium, but arsenic and petroleum products.
- Following this effort as the research lead for congressionally mandated health studies to determine
 the impacts of exposures on birth outcomes and development. This prospective birth cohort study is
 being done through a cooperative agreement with the Centers for Disease Control/Agency for Toxic
 Substances Disease Registry and includes partnerships with Navajo Area IHS and PL-638 clinical
 facilities as well as Navajo Nation Division of Health.

Materials/Products Title	Format (Brochure, Factsheet,	Willing to share?	Product in the PEPH
	DVD/Video, Website, etc.)		Resource Center?
Water Warning Posters identifying	14 X 18 yellow laminated	Yes, but probably not	No
contaminated water sources in each chapter of	posters with photos, data,	of general	
Navajo Nation	and MCL exceedances	informational use	
4 stories About Water	DVD/Video – 36 min primarily	yes	No
	in Navajo w/ English subtitles		
Environmental Health Basics Training	Powerpoint presentation	Yes	No
Water Quality Training	Powerpoint presentation	Yes	No
Regional (Agency) maps identify contaminated	Laminated maps, electronic	yes	No
water sources	and hard copy up to 2' X 3'		
Healthyvoices.org	website	Yes, accessible through	No
		www.healthyvoices.org	
		and contains all of	
		these materials	

PEPH Program(s):

R01

Paducah Gaseous Diffusion Plant Future Vision Project

Key Personnel (Point of Contact) and Institution:

Dr. Lindell Ormsbee, Core Leader, University of Kentucky Superfund Research Program Research Translation Core

Anna Hoover, UK-SRP Research Translation Core

Partners/Key Personnel and Institutions:

Dr. Chike Anyaegbunam, UK College of Communications & Information Studies

Dr. Ted Grossardt, Kentucky Transportation Center

John Ripy Jr., Kentucky Transportation Center

Benjamin Blandford, Kentucky Transportation Center

Dr. Keiron Bailey, University of Arizona

Steve Hampson, Assoc. Director, Kentucky Research Consortium for Energy and the Environment

The Citizens of McCracken and Ballard Counties

Brief Description:

Through the auspices of the Kentucky Research Consortium for Energy and the Environment (KRCEE), members of the University of Kentucky Superfund Research Program Research Translation Core joined experts in Community-Based Participatory Communication and Structured Public Involvement to develop an innovative approach for community involvement in determining the future of Superfund sites. The KRCEE team was charged by Kentucky's Congressional delegation and the United States Department of Energy with integrating public, regulatory, and technical community visions to produce a publicly approved Future State Vision Report for the Paducah Gaseous Diffusion Plant (PGDP) National Priority List Superfund site. The three-step methodology developed includes personal interviews, focus groups, and large community meetings, with individuals from disparate stakeholder groups engaged at each stage. The information gathered during the interview and focus group stages was utilized to create sample scenario visualizations that were discussed and scored during large community meetings, as well as in an online interface. The project resulted in a "PGDP Future State Vision Document" that, while not decisional, will help inform future US Department of Energy decisions related to the disposition of the PGDP after decommissioning. A community consultation panel with representatives from sixteen unique stakeholder groups worked with the team throughout to develop and improve the engagement process.

Key Successes/Outcomes:

- Increased knowledge of PGDP-related issues and available resources
- Increased awareness of pending closure and potential future uses of the site
- Mobilized community around future use issues
- Provided capacity-building experience in collaborative visioning
- Documented community values and scenario preferences for future advocacy
- Created informational repository website: www.paducahvision.com

• Published formal report of findings and made accessible via the www.paducahvision.com website

Materials/Products Title	Format (Brochure, Factsheet,	Willing to share?	Product in the PEPH
	DVD/Video, Website, etc.)		Resource Center?
PaducahVision Website (with survey interface)	www.paducahvision.com	Yes	No
Final Project Report	Located on www.paducahvision.com	Yes	No
	website		
Clu-In Risk e Learning Webinar (archived	http://www.clu-	Yes	No
online)	in.org/conf/tio/engagement1_033111/		
	PowerPoint Presentation	Yes	No

PEPH Program(s):

Pregnancy Health Among Florida Farmworkers

Key Personnel (Point of Contact) and Institution:

Dr. Linda McCauley Emory University School of Nursing

Partners/Key Personnel and Institutions:

Eugenia (Jeannie) Economos, Environmental Health Project Coordinator, Farmworker Association of Florida
Jose Antonio Tovar-Aguilar, Farmworker Association of Florida
Dr. Maureen Kelley, Emory University, Family and Community Nursing
Ms. Joan Flocks, University of Florida
Jessica Culley, Farmworker Health and Safety Institute

Brief Description:

The goal of this project is to examine how female farmworkers assess the risks of certain environmental and occupational hazards to pregnancy. This project is motivated by the need to characterize work-related practices, workplace hygiene, and health that have the potential to impact the health of pregnant women and their unborn children working in agriculture. To achieve this goal, this project will rely on partnerships between Emory University, the University of Florida, the Farmworker Association of Florida and the Farmworker Health and Safety Institute to bring together experts in community-based participatory research and methods of education and organizing among female farmworkers.

Objectives

- Examine current perceptions of work hazards and pregnancy health among female farmworkers
 working in nursery and fernery operations in Florida.

 Data collected from focus groups conducted on female farmworkers and health care providers was
 used to inform the development of a survey instrument exploring knowledge and beliefs regarding
 the risks and hazards of their work and work-related factors that influence pregnancy health.
- 2. Assess the extent of exposures to heat, ergonomic and chemical exposures that have the potential to impact pregnancy outcomes in a subsample of our study population.
 A survey instrument was piloted and administered to 260 female farmworkers between the ages of 19-40 working in fernery or nursery operations in central Florida. We are finalizing data analysis to characterize the work environment and work practices of this vulnerable understudied population.
- 3. Develop culturally and linguistically-appropriate educational materials emphasizing health promoting and protective behaviors during pregnancy for female farmworkers.
 Results from the survey are currently being translated to guide the development of an educational training curriculum that will incorporate information gleaned from our study participants, health providers, and other stakeholders to promote a healthy pregnancy. To accompany the training, we will also prepare a low literacy pregnancy health booklet in pictorial format that will contain

information on the work hazards that can affect pregnancy outcomes and pregnancy health information.

Key Successes/Outcomes:

This proposed work will have broader impact on the community for several reasons: It will provide direct benefit to the community by developing culturally and linguistically- appropriate educational materials emphasizing health promoting and protective behaviors during pregnancy for female farmworkers; it will involve a collaboration with female farmworkers—a highly underrepresented group in occupational health—to advance our understanding of the exposures that could affect the health of pregnant farmworkers; and the results of this project will be disseminated to farmworkers and the health and scientific community through farmworker community public forums, peer-reviewed journal articles, presentations at professional conferences and web-based publications.

PEPH Program(s):

Research to Action

Prenatal Environmental Determinants of Intergenerational Risk (PEDIGREE)

Key Personnel (Point of Contact) and Institution:

Barbra Cohn - Public Health Institue

Partners/Key Personnel and Institutions:

Marj Plumb - Plumbline Consulting Mary Beth Terry - Columbia University

Brief Description:

The Child Health and Development Studies (CHDS), a project of the Public Health Institute, is a prospective cohort study, which began over 40 years ago to observe pregnancy, birth, and health outcomes and is expanding across multiple generations. Over 15,000 families in the Kaiser Permanente Health Plan joined the CHDS between 1959 and 1967. Today, the original families and their children continue to participate in the CHDS, allowing scientists to discover how disease starts even before birth - not just by genes, but also through social, personal, and environmental surroundings. Cohort member's role had been solely as research subjects. In 2010 the CHDS received funding from NIEHS to form a Participant Advisory Counsel (PAC). The purpose of the CHDS's PAC is to 1) provide guidance on research activities 2) identify research priorities from the perspective of the cohort and 3) promote cohort retention and more effective broad-scale ways to communicate with the cohort.

Key Successes/Outcomes:

Over 140 cohort members were invited to participate in the PAC. Twenty-one of the invited cohort members responded as interested, and 18 members currently serve on the counsel today. The PAC meets quarterly for full day in-person meetings to discuss issues pertinent to the CHDS. In year one of the group we have 1) recruited the 18 PAC members 2) led them in trainings on pertinent CHDS research activities and 3) developed a training time line. To date we have had 4 meetings, and a fifth meeting is planned for April 2012. The meeting topics have included: Breast cancer and the environment, report back of individual study results, and research processes/methods.

Materials/Products Title	Format (Brochure, Factsheet,	Willing to share?	Product in the PEPH
	DVD/Video, Website, etc.)		Resource Center?
From "Research On" to "Research With" Cohort	Poster	Yes	No
Members: A Case Study			

PEPH Program(s):

Breast Cancer and Environment Research Program

Children's Environmental Health Symposium: Emerging Research and Implications for Risk Assessment and Public Policy. January 2012

(Grant Title: Center for Integrative Research on Childhood Leukemia and the Environment)

Key Personnel (Point of Contact) and Institution:

Amy D Kyle, PhD MPH, School of Public Health, University of California Berkeley

Partners/Key Personnel and Institutions:

Organizers:

*Mark Miller, MD, Pediatric Environmental Health Specialty Unit, UCSF

*Melanie Marty, PhD, Office of Environmental Health Hazard Assessment

California Environmental Protection Agency

Contributing Organizations:

Center for Environmental Research on Children's Health

University of California Berkeley

Center for Child Environmental Health Risks Research

University of Washington

Center for Children's Environmental Health

University of California, Davis

Pediatric Environmental Health Specialty Unit

University of Washington

Berkeley/Stanford Children's Environmental Health Center

University of California, Berkeley

Children's Environmental Health and Disease Prevention Research Formative Center

UCSF

Berkeley Superfund Research Center

University of California, Berkeley

Brief Description:

The Children's Environmental Health Symposium: Emerging Research and Implications for Risk Assessment and Public Policy.

The symposium was held in Oakland on January 11 and 12, 2012. The primary audience was scientists who work in state and federal agencies that have responsibilities for environmental public health protection and an interest in children's environmental health.

The symposium provided an opportunity for agency scientists to hear presentations of research findings by investigators from the premier children's environmental health research centers on the west coast. It also provided for discussions about the implications of the research for risk assessment and other actions of

government agencies and created opportunities for interaction among the research and government sectors and among the research groups.

A working meeting among the research centers provided for further discussions of opportunities for collaboration and joint efforts.

Video recordings of the presentations will be available at YouTube.

Key Successes/Outcomes:

While we don't expect to see an immediate public health or policy impact from one symposium, this is a step toward building an on-going collaboration among the government agencies with responsibilities for children's environmental health, researchers working in this area, the pediatric environmental health specialty units that provide expertise to the health care sector, and other interested parties to support policy development and public understanding.

This symposium was organized to meet the needs of the government agencies and to respond to their questions and concerns and was viewed as successful by its audience.

Materials/Products Title	Format (Brochure, Factsheet,	Willing to share?	Product in the PEPH
	DVD/Video, Website, etc.)		Resource Center?
Videos of presentations will be available	YouTube video	yes when	no
		completed	

PEPH Program(s):

Centers for Children's Environmental Health & Disease Superfund Research Program

PROTECT (Puerto Rico Testsite for Exploring Contamination Threats) - a NIEHS Superfund Research Program P42 Center.

Key Personnel (Point of Contact) and Institution:

Mariah Nobrega, Program Manager, Northeastern University

Partners/Key Personnel and Institutions:

Northeastern University, Boston, MA
University of Puerto Rico - Medical Sciences Campus, San Juan, PR
University of Michigan, Ann Arbor, MI
University of Puerto Rico at Mayaguez, Mayaguez, PR

Brief Description:

The PROTECT program studies exposure to environmental contamination in Puerto Rico and its contribution to preterm birth (less than 37 completed weeks of gestation). PROTECT also seeks to better understand the phenomena affecting fate and transport of hazardous substances in karstic aquifers and to develop green remediation strategies that attenuate and mitigate exposure to protect human health and ecosystems. Through integrated analytical, mechanistic, epidemiology, fate-transport, and remediation studies, along with a centralized, indexed data repository, PROTECT will deliver new knowledge and technology in the area of contaminants of interest to the Superfund Research Program as a potential cause of preterm birth. The new knowledge and technology will also be useful more broadly in the overall field of environmental health.

Puerto Rico has been selected as a testsite because it has the highest rate of preterm birth (~20%) among the states and territories of the U.S., and because of the extent of hazardous waste contamination on the island. Puerto Rico has more than 150 contaminated sites that include 15 active Superfund sites. Although Puerto Rico is an island with an unusually high burden of pollution, including a considerable density of Superfund sites, this project is the first to investigate the causal relationships between environmental pollutants and preterm birth in this at-risk population.

PROTECT is a multi-project, multi-institution collaboration that involves four primary institutions: Northeastern University, University of Puerto Rico, Medical Sciences Campus, University of Puerto Rico, Mayaguez and University of Michigan. PROTECT is multidisciplinary and interdisciplinary and involves significant interaction and sharing of samples, testing and results among the disciplines of analytical chemistry, epidemiology, engineering and toxicology.

Key Successes/Outcomes:

Please visit our website for program highlights.

Materials/Products Title	Format (Brochure, Factsheet, Willing to share		Product in the PEPH
	DVD/Video, Website, etc.)		Resource Center?
http://www.northeastern.edu/protect/downloads/	Factsheet in PDF	Yes	Not Sure
http://www.northeastern.edu/protect/	Website	Yes	Not sure

Protecting the Health of Future Generations: Assessing and Preventing Exposures to Endocrine-Disrupting Chemicals in Two Alaska Native Arctic Communities on St. Lawrence Island

Key Personnel (Point of Contact) and Institution:

Pamela Miller, Executive Director and PI, Alaska Community Action on Toxics

Partners/Key Personnel and Institutions:

Frank von Hippel, PI, University of Alaska Anchorage
Loren Buck, PI, University of Alaska Anchorage
David Carpenter, PI, University at Albany, School of Public Health, Institute for Health and the Environment
Vi Waghiyi, Environmental Health and Justice Program Director and Project Coordinator, Alaska Community
Action on Toxics

Brief Description:

This community-based participatory research project investigates exposures to two classes of emerging endocrine-disrupting chemicals (EDCs) with the Yupik people of St. Lawrence Island (SLI) in the Alaskan Arctic. The Arctic acts as a "cold trap" and is a hemispheric sink for persistent organic pollutants (POPs) that are transported through a well-documented process known as global distillation via prevailing atmospheric and oceanic currents from warmer regions. The Arctic is significant as an indicator region for long-range transport of legacy chemicals—a term applied to those POPs that have been banned or restricted—as well as emerging chemicals of concern. Arctic wildlife and people are also exposed to high levels of POPs from local sources, such as military toxics, solid waste dumps, and household dust. Exposure to POPs from both distant and local sources is a trend in the Arctic that is likely to increase due to increased global use and production of EDCs and climate warming. The purpose of this project is to initiate research partnerships that work in collaboration with the two Yupik villages of SLI to assess multiple exposure routes of two emerging EDCs—polybrominated diphenyl ethers (PBDEs) and perfluorinated compounds (PFCs). The project will assess exposures to PBDEs and PFCs in surface waters through analyses of contaminant levels and biomarkers for xenobiotic chemicals in the threespine stickleback fish. The research team will also analyze household dust for PBDEs and PFCs. Because the Yupik people of SLI depend on the harvest of wild foods to sustain them and their way of life, the research team will analyze levels of PBDEs and PFCs in traditional foods which are likely a major exposure pathway due to the biomagnification of POPs in marine mammals and fish that are critical components of the Yupik diet. This study will include a human biomonitoring component in order to assess levels of PBDEs and PFCs in human blood serum in relation to measures of thyroid health. The aim of this exposure assessment is to provide information, ownership of data, and training for the people of SLI so that they can plan and participate in public health actions to reduce environmental health risks. Finally, the research team collaborates with the leadership, elders, and youth of SLI to develop measures to prevent and mitigate environmental exposures through community educational programs and public policy actions, including community-based research institutes for college credit, health fairs for all community members, and workshops for health care providers.

Key Successes/Outcomes:

As this is a new grant (awarded in August 2011), we have been convening meetings with the community leadership to plan field research and educational events for 2012. We will be conducting a community-based research institute for Alaska Native communities in Nome, Alaska in June 2012. Field sampling in 2012 will include the collection of stickleback fish for contaminant analyses and endocrine assays as well as the collection of traditional food samples.

Materials/Products Title	Format (Brochure, Factsheet,	Willing to share?	Product in the PEPH
	DVD/Video, Website, etc.)		Resource Center?
Protecting Future Generations	Fact Sheet about Community-	Yes	No
	Based Research Project		

PEPH Program(s):

R01 Community Participation in Research

Research Translation Core (RTC)- University of Washington Superfund Research Program

Key Personnel (Point of Contact) and Institution:

RTC Director Thomas Burbacher, Ph.D.
RTC Co-Director Clement Furlong, Ph.D.
RTC Program Manager Katie Frevert, M.Ed.

Partners/Key Personnel and Institutions:

Northwest Toxic Communities Coalition Region 10 EPA Region 10 ATSDR Washington State Department of Health Washington Sate Department of Ecology

Brief Description:

The University of Washington Superfund Research Program's (SRP) Research Translation Core (RTC) collaborates with local agencies and community groups working toward common solutions to hazardous waste issues. The activity that we have undertaken, in the broadest sense, is one of capacity building. Partnering with government agencies and with community stakeholders represent two key aims of the RTC. A university-based SRP may become the critical third leg of a stool providing stability, perspective and balance as its partners address seemingly intractable problems.

The core works with state and federal agencies in a range of activities and partners with community organizations that include the Northwest Toxic Communities Coalition (comprised of 25 individual non-profit organizations from four states). The coalition shares resources, information and support for toxic cleanup efforts throughout the Northwest states.

In January 2010, the president of the United States appointed a new Regional Administrator to EPA Region 10. This provided a rare opportunity for a fresh start between EPA agency staff and the regional community stakeholders who are impacted by hazardous waste.

In the last two years, the RTC has collaborated with EPA and the Northwest Toxic Communities Coalition to identify shared priorities and work together toward addressing these. Progress has been made in improving community access to agency-hosted public information meetings and in creating a regional 'Community Air Workshop' (scheduled for April 2012). The RTC has been fortunate to engage with these committed partners working toward achieving benchmark outcomes. The efforts have not only deepened the core's relationship to each partner but have helped to strengthen the relationships between the partners themselves.

Key Successes/Outcomes:

Community Organizations and Agencies

- Forming a unique regional coalition comprised of community organizations that work on hazardous waste issues, as committed academic partners
- Collaborating with individual community organizations, and participating in community engagement and education activities
- Sharing presentation opportunities with fellow SRP grantees, community organizations and agency partners (these include EPA annual meetings for remedial program managers and community involvement coordinators)
- Hosting the UW-SPR Agency Seminar Series since 2007 for EPA Region 10 and Washington State's Departments of Health and Ecology partners (and as CLU-IN national webinars since 2011)
- Designing and participating in a regional community air quality workshop to be held in 2012; an outcome of a three-way partnership between community, agency and academia
- Presenting relevant SRP research at science cafes and a Superfund site river tour for community members and educators

Policy Impacts, Research Translation and Communication

- Dr. Clement Furlong's research findings related to specific genetic susceptibilities have informed regulatory policy in organophosphate (OP) pesticides at the federal level.
- Research is communicated through open-source media such as the work of Dr. Evan Gallagher who has sequenced a number of salmon genes and developed corresponding assays that serve as biomarkers of olfactory injury.
- An ongoing and multi-year collaboration between Dr. Furlong's team and Dr. Rudy Johnson's CDC laboratory on protein biomarkers of OP exposure is a valuable outcome of the ATSDR Seminar Series.

Materials/Products Title	Format (Brochure, Factsheet,	Willing to share?	Product in the PEPH
	DVD/Video, Website, etc.)		Resource Center?
UW Superfund Research Program- brochure	brochure	yes	no
UW Superfund Research Program- website	website	yes	yes
UW Superfund Research Program- e*Bulletin	archive website	yes	yes
UW Superfund Research Program- Agency	archive website		yes
Seminar Series Presentation Archives			

PEPH Program(s):

Research Translation Core Enhances SRP Relevance to North Carolina Decision Makers, Impacted Communities and Educators

Key Personnel (Point of Contact) and Institution:

Kathleen Gray, MSPH, UNC-Chapel Hill

Partners/Key Personnel and Institutions:

UNC-Chapel Hill: Fred Pfaender, PhD, Marc Serre, PhD, Dana Haine, MS, Tracey Slaughter, Prahlad Jat Division of Public Health, NCDHHS: Mina Shehee, PhD, Ken Rudo, PhD, Mercedes Hernandez-Pelletier, MPH

Brief Description:

The Research Translation Core (RTC) of the UNC Superfund Research Program (SRP) focuses on improving scientific and public understanding of how Superfund chemicals harm human health and how to reduce exposure to those chemicals, enabling government officials and the public to make informed decisions about reducing risk. The RTC builds the capacity of agencies charged with protecting human health and the environment by actively participating in policy discussions, developing software that enables decision makers to factor geospatial uncertainty into risk assessments, and facilitating SRP researchers' efforts to develop improved cleanup technologies. We have a multifaceted partnership with the Division of Public Health (DPH) in the NC Department of Health and Human Services (NCDHHS). Together we are engaging community leaders and residents around a subset of North Carolina Superfund sites with arsenic and TCE contamination and also identifying NC populations at greatest potential risk from well water contamination, developing public health action strategies to reduce exposure, and increasing intra-agency collaboration to sustain this effort over time.

We also introduce cutting edge science into middle and high school classrooms as well as informal education settings and conduct short courses for graduate students on a range of topics, from commercialization and Superfund, to science communication and environmental justice.

Key Successes/Outcomes:

To date, we have mapped 30 contaminants for which private wells are required to be tested by NC law and have identified some data patterns of concern, where public health action may be needed. In one impacted community, initial mapping results have led to an emerging collaboration with the health department to address the issue locally.

We are also developing training tools and seminars to facilitate technology transfer of the space/time analysis tools used in the well water project, and we are partnering with NCDHHS to launch a user-friendly web interface for residents whose wells have been tested.

Researchers assisted USEPA's Office of Superfund Remediation and Technology Innovation in demonstrating how the advanced geospatial modeling could be used to map PCE using limited data collected at the Billings, Montana, PCE site.

Materials/Products Title	Format (Brochure, Factsheet,	Willing to share?	Product in the PEPH
	DVD/Video, Website, etc.)		Resource Center?
UNC SRP web site	web site	yes	no
NC Well Water web site and mapping guidance	web site, Word files	yes	no
documents			
Tracking and Analyzing Contaminants (TrAC) in	guidance document	yes	no
Private Well Water in NC—Basic Instructions for			
Creating Maps of County-level Data			
Tracking and Analyzing Contaminants (TrAC) in	guidance document	yes	no
Private Well Water in NC—How to Extract GPS			
Information and Geocode Addresses			
Fact sheets on arsenic, benzene, chlorinated	fact sheets	yes	no
solvents, and risk assessment			

Targeted Communication Training for UK-SRP Graduate Students and Postdoctoral Scholars

Key Personnel (Point of Contact) and Institution:

Anna Goodman Hoover, University of Kentucky Superfund Research Program Research Translation Core

Partners/Key Personnel and Institutions:

Stephanie Jenkins, University of Kentucky Superfund Research Program (UK-SRP) Research Translation Core Sarah Riley, M.A., Communication Instructor at Bluegrass Community and Technical College Dr. Lindell Ormsbee, Core Leader, UK-SRP Research Translation Core

Brief Description:

The 2010 Superfund Research Program strategic plan encourages programs to promote research relevance through interactions with stakeholders throughout the research process. This directive applies not only to community engagement and research translation cores, but also to scientific investigators themselves. The University of Kentucky SRP strives to meet these goals through translational interventions at both the investigator and the policy levels. In accordance with the UK-SRP's stakeholder-driven model of translation that moves beyond information dissemination and feedback and into high levels of multi-stakeholder engagement, the Research Translation Core has developed a training program for graduate students and postdoctoral scholars that encourages young scientists to develop audience targeting skills, promoting improved communication of research outcomes to specific stakeholder groups. Training participants then are given opportunities to practice these skills as presenters in state agency seminars and Superfund communities. This project promotes a holistic approach to multi-level stakeholder engagement across the program, speaking directly to the NIEHS's call for including stakeholders in the planning, execution, and dissemination of research projects.

Key Successes/Outcomes:

Presentations and a training workbook were developed for the pilot course and are currently being revised for future courses. Specific course sessions and workbook chapters address the topics of research translation, audience segmentation/targeting, and overall presentation style.

Materials/Products Title	Format (Brochure, Factsheet,	Willing to share?	Product in the PEPH
	DVD/Video, Website, etc.)		Resource Center?
Training Workbook	Spiral-Bound Workbook	Yes	No
Course Session Presentations	PowerPoint	Yes	No
Adapted Communication Apprehension Survey	MS Word	Yes	No
Adapted Communication Evaluation Form	MS Word	Yes	No
Adapted Communication Skills Training Survey	MS Word	Yes	No

PEPH Program(s):

Teachers' Domain Environmental Public Health Collection

Key Personnel (Point of Contact) and Institution:

Ted Sicker, WGBH Educational Foundation Chris Dietlin, WGBH Educational Foundation

Partners/Key Personnel and Institutions:

Margaret Reid, Boston Public Health Commission
Ann Backus, Harvard NIEHS Center for Environmental Health
Kathy Vandiver, MIT Center for Environmental Health Sciences
Gillian Puttick and Sally Crisman, TERC

Brief Description:

WGBH Educational Foundation has completed our K-12 Environmental Public Health collection of 60 media resources, adapted from a range of sources including public television, NIH, EPA, and other PEPH participants. Each media asset (generally a short video or an interactive experience for students) is accompanied by a background essay for teachers and discussion questions for use in the classroom. They are now distributed through Teachers' Domain at http://www.teachersdomain.org. Since the initial launch of the first set of these resources in the summer of 2010, they have garnered nearly 20,000 page views. In the final phase of our grant, we are building upon these media resources, completing three lesson plans, a set of three self-paced lessons for students, and a set of four self-paced lessons for teacher professional development. In our poster session, we will demonstrate examples of the media as well as one of the self-paced lessons for teachers.

Later in 2012, the entire project will migrate to a new digital library platform, PBS LearningMedia.

Key Successes/Outcomes:

Since the initial launch of the first set of these resources in the summer of 2010, they have garnered nearly 20,000 page views and have been presented by WGBH and project partners at a range of K-12 science and public health conferences.

Materials/Products Title	Format (Brochure, Factsheet,	Willing to share?	Product in the PEPH
	DVD/Video, Website, etc.)		Resource Center?
www.teachersdomain.org/special/enh	website	yes	yes

PEPH Program(s):

ARRA Challenge Grant

The Libby Community Childhood Health Investigation and Exposure Follow-Up Study (CHIEFS)

Key Personnel (Point of Contact) and Institution:

Grace LeMasters PhD, University of Cincinnati College of Medicine

Partners/Key Personnel and Institutions:

Center for Asbestos Related Disease (CARD)

- Brad Black, MD (Co-PI)
- Jennifer Fortner, Center for Asbestos Related Disease

University of Cincinnati

- Patrick Ryan, PhD
- James Lockey, MD, MS
- Chris Wolfe, BA

Agency for Toxic Substances and Disease Registry

Ted Larson, MS

Brief Description:

The specific aims of CHIEFS are: 1) determine if childhood exposure to Libby amphibole asbestos (LA) is associated with a significant increase in adverse respiratory symptoms, decrements in pulmonary function, decrements in diffusing capacity and lung volumes, and an increase in pleural changes, 2) develop and utilize a comprehensive environmental exposure matrix to evaluate childhood exposures to LA that includes factors such as time, geography, personal activities and home environmental sampling available from an EPA database, and 3) Implement and evaluate a well-defined reciprocal outreach and communication program. This program includes residents of Libby MT, CARD, UC investigators, local health professionals, hospital personnel, and targeted federal agencies. Recruitment has been focused on children (600) who participated in a screening program sponsored by ATSDR in 2000 - 2011. The Libby CHIEFS would not be possible without the strong partnerships that have been formed between all the groups and individuals involved. ATSDR was instrumental during our initial recruitment efforts. As members of the Libby community themselves, CARD staff has played a prominent role in our community outreach efforts. In October 2010 and 2011, CARD sponsored Libby Amphibole Research Rallies and Symposium. These two public events attracted almost 10% of the community. At these events, the public learned about asbestos related disease and lung health as well as met with investigators to learn about current research being done in Libby. All CHIEFS participant screening appointments are done in Libby at the CARD Clinic, making a strong, collaborative relationship an essential part of this study. The EPA has provided the residential sampling data used in CHIEFS to measure home exposures of children to LA.

Key Successes/Outcomes:

- 2010 and 2011 Libby Research Rally
 - Each year attended by almost 10% of the Libby community (children and adults)

- Activities were developed for children to promote lung health awareness
 - CHIEFS staff distributed "healthy lung" quizzes with small gifts to children.
 - Children were shown and taught an inexpensive way to create model lungs and a diagram from balloons and large quart plastic containers. This showed children how lungs work and how we breathe.
 - Directions were given to children to make their own model lung for a home science project
- Informational brochures and CHIEFS sponsored items were distributed to adults
- Adults could meet and discuss with researchers
- 2011 Libby Amphibole Research Symposium
 - Dr. Grace LeMasters presented an overview of early childhood lung development and the Libby CHIEFS Study
 - o Dr. Brad Black provided an overview on health effects related to LA exposure
 - Dr. James Lockey presented background and the pathophysiology of Libby amphibole asbestos exposure
- CHIEFS Study Progress
 - 370 young adults have agreed to participate in CHIEFS
 - 293 participated in the original ATSDR screening
 - o 227 CHIEFS participants have completed their clinical exam
- Capacity Building
 - UC researchers set up spirometry software and trained CARD respiratory therapists on optimum methods for pulmonary function testing
 - Dr. James Lockey gave a seminar at St. John's Hospital Radiology Department on how to minimize radiation exposure for young adults.
 - CHIEFS Facebook page was created for social networking
 - Networking with other researchers, physicians and individuals that have been impacted by asbestos related disease through the awareness organization Voice of the Victims

Materials/Products Title	Format (Brochure, Factsheet,	Willing to share?	Product in the PEPH
	DVD/Video, Website, etc.)		Resource Center?
2011 Libby Research Rally and Symposium	Video	Yes	Can be linked
Pediatric Environmental Health	Webinar	Yes	Can be linked

EHS Core Centers ARRA Challenge Grant R21

The New England Consortium / University of Massachusetts Lowell

Key Personnel (Point of Contact) and Institution:

Craig Slatin, Sc.D., MPH, Professor, Department of Community Health and Sustainability Co-Director, Center for Health Promotion and Research, University of Massachusetts Lowell

Partners/Key Personnel and Institutions:

The New England Consortium (TNEC), is a university-community partnership based at the University of Massachusetts Lowell in the Center for Health Promotion and Research, including university staff and faculty, five Coalitions for Occupational Safety and Health (ConnectiCOSH, MassCOSH, NHCOSH, RICOSH, and Western MassCOSH), and the Civil Service Employees Association (CSEA) of New York, Local 1000, Inc. of the American Federation of State, County and Municipal Employees (AFSCME). TNEC has been working since 1987 to provide top quality, participatory hands-on hazardous waste operations and emergency response (HAZWOPER) and supporting health and safety training to workers throughout the region and during that time has trained more than 27,000 workers in 1,700 courses, for a total of nearly 410,000 contact hours of training.

TNEC is one of 20 national programs administered by the National Institute of Environmental Health Sciences Worker Education Training Program (NIEHS-WETP) through a cooperative agreement. The agreement supports TNEC's core hazardous waste and emergency response operations training program, the continuation and expansion of ongoing initiatives, and efforts to sustain the capacity of its member organizations to lead and support the regional and national health and safety movement.

Brief Description:

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The hazardous waste operations and emergency response (HAZWOPER) workforce requires comprehensive health and safety training to prevent work-related harm. The training prepares this workforce to conduct inherently dangerous work with an enhanced ability to best protect themselves and surrounding communities from exposure to hazardous materials. Due to the extensive use of hazardous and toxic materials in most sectors of industry, as well as decades of legally and illegally disposed hazardous wastes, a broad range of workers need this training. Additionally, the pervasiveness of hazardous materials in

industrial and commercial production demands that private and governmental organizations are prepared to send trained and protected workers to respond to emergency incidents.

Key Successes/Outcomes:

During its 2011 project year, TNEC conducted one hundred forty-five courses for 2,114 workers involving 21,985 hours of instruction in its core HAZWOPER training program. TNEC provided open enrollment and customized contract trainings for diverse groups of public and private sector firms, regulatory officials and organizations, and for environmental / green jobs training programs like the Boston-based JFYNetworks Environmental Technician Training Program, Building Futures in Providence, RI and the Hartford Jobs Funnel. Since 2002, the consortium and U.S. EPA Region 1 have partnered in providing training to New England Native American Tribes and TNEC is exploring ways that it can continue to do so in the future.

Additionally, as part of a special supplemental award under the American Recovery and Reinvestment Act (ARRA), TNEC completed two years of training programs for municipal and state workers on transportation, construction and other infrastructure projects, employees in green energy start-up firms, and job training program trainees with the likelihood of being interviewed and/or hired to work on stimulus-supported Superfund cleanup projects and/or for jobs in the green energy sector. The project reached 1,027 students in sixty-one courses covering 13,476 contact hours of instruction.

Through the ARRA program, TNEC was able to serve additional job training programs: New Directions in New Bedford, MA, Montague Youth Green Jobs, Veterans Inc (Worcester), the MLK Business Empowerment Center (Worcester), Roots Up (Holyoke), Turner Weatherization, and the Hartford (CT) Jobs Funnel. Also, TNEC delivered training to public workers in fifteen Massachusetts towns and cities, to employees of different quasi-public authorities: MWRA, MASSPORT and the Narragansett Bay Commission (RI) and for private firms working in alternative energy development.

Another exciting product of the ARRA training program was the delivery of and development of training curriculum designed to provide workers and environmental activists with the tools to advocate for green chemistry and implementation of safer alternatives to reduce toxic contamination. The training brought together workers and activists to: understand some basic principles and concepts of green chemistry and how its application on a larger scale can help reduce and prevent the generation of hazardous wastes, as well as provide safer and healthier remediation of hazardous waste sites; and engaged them in activities that strengthen efforts to advance policy changes to promote greater support for making a transition to green chemistry. The Worker and Environmentalist Green Chemistry Awareness Training Curriculum can be accessed at the following link on the TNEC website:

http://www.uml.edu/tnec/docs/Green_Chemistry/Green_Chemistry.html

Materials/Products Title	Format (Brochure, Factsheet,	Willing to share?	Product in the PEPH
	DVD/Video, Website, etc.)		Resource Center?
40-Hour Hazardous Waste Site for Personnel	Student Manual	yes	no (through NIEHS
Basic Health & Safety Course			WETP)
24-Hour Emergency Responders Basic Health &	Student Manual	yes	no (through NIEHS
Safety Course			WETP)
8-Hour Worker Centered Pollution Prevention	Student Manual	yes	no (through NIEHS
			WETP)
8-Hour Emergency Responder All Hazards	Student Manual	yes	no (through NIEHS
Awareness Training			WETP)
1. Worker and Environmentalist Green	Student Manual, Instructors	yes	yes
Chemistry Awareness Training Curriculum (pdf) -	Guide, alternative curriculum,		
multiple media	posters		
2. Worker and Environmentalist Green			
Chemistry Awareness Instructors Guide (pdf)			
3. Alternative Curriculum for specific settings-			
Hospital Workers (pdf)			
4			

Worker Education and Training Program

Tribal-University Collaboration to Address Tribal Exposures to PAHs and Improve Community Health

Key Personnel (Point of Contact) and Institution:

Anna Harding, Oregon State University
Barbara Harper, Confederated Tribes of the Umatilla Indian Reservation

Partners/Key Personnel and Institutions:

Stuart Harris, Confederated Tribes of the Umatilla Indian Reservation Molly Kile, Oregon State University Sandra Uesugi, Oregon State University Dave Stone, Oregon State University

Brief Description:

Activities in the third year of the Community Engagement Core of Oregon State University's Superfund Research Program (SRP) have focused on engaging in capacity building with our Confederated Tribes of the Umatilla Indian Reservation (CTUIR) partners and assessing PAH exposure pathways specific to cultural lifestyles. We have also been engaged in activities to begin the conversation about risk reduction measures, and dissemination of our work. The Core developed a unique Material and Data Sharing Agreement signed by all three parties—CTUIR, OSU, and the Pacific Northwest National Laboratory, and has been used by all in the OSU SRP Center who are working with CTUIR data. This agreement was disseminated in the January 2012 issue of the journal, Environmental Health Perspectives. During May 2011 the Engagement Core headed up the collection of data that involved personal air sampling during the traditional smoking of salmon, the first study of its kind conducted with tribal members. Participants wore personal air samplers during the entire smoking event, and urine samples were taken before, during and after the smoking process. We also collected smoked salmon samples that had been smoked in two types of structures (wood shed and tipi) and using two different woods (apple and alder). Tribal participants were trained in the proper methods of sampling and data collection using training videos designed for this purpose. Samples have been analyzed by our SRP analytical core. The Engagement Core produced a CTUIR-OSU Partnership Newsletter in November 2011 to send to our Tribal Advisory Committee Members, to our Tribal partners for distribution, to the OSU SRP community, with the request to distribute to any interested parties. The newsletter may be viewed at: http://oregonstate.edu/superfund/sites/default/files/fall2011srp_ctuir.pdf. Finally, Barbara Harper and Anna Harding were invited to present a national webinar through the Superfund Research Program Risk e-Learning series, sponsored jointly by NIEHS and the USEPA, May 23, 2011. The webinar was titled, "Addressing tribal exposures to polycyclic aromatic hydrocarbons (PAHs) and building tribal capacity through a tribal-university partnership."

Key Successes/Outcomes:

We developed a Material and Data Sharing Agreement which has now been disseminated in the peer-review literature. The data sharing agreement has been faithfully used by all researchers and graduate students in

the Oregon State University SRP who are working with tribal data. The agreement has also been adapted for other Tribal projects and is adaptable for any community-based participatory research project. The data sharing agreement and related article on tribal research ethics is published in the January 2012 issue of Environmental Health Perspectives, 120(1), 6-10.

Drs. Harper and Harding presented a national webinar through the SRP Risk e-Learning series in May 2011 to discuss tribal research ethics when conducting community-based participatory research with tribal communities.

We facilitated a collaborative research project between OSU SRP investigators and our CTUIR partners to collect and analyze personal air and urine samples from Tribal members smoking salmon using traditional smoking methods. We found high levels of polycyclic aromatic hydrocarbons PAH) in the personal air of the members smoking the fish in either a smoke shed or tipi. We also found higher PAH levels in the traditionally smoked salmon when compared to commercially smoked fish. These studies are the first of its kind with tribal members and we are now working on understanding the implications of these results, and sharing these results with our tribal partners. These studies will contribute to a better understanding of PAH exposures to tribal members engaged in traditional cultural practices.

We published a CTUIR-OSU Partnership Newsletter which is available at: http://oregonstate.edu/superfund/sites/default/files/fall2011srp_ctuir.pdf, which describes these studies and has been distributed to the tribal community.

The Engagement Core has provided a unique opportunity for cultural capacity building for our SRP researchers, SRP trainees, and other graduate students who have learned a great deal about doing research with a tribal sovereign nation.

Materials/Products Title	Format (Brochure, Factsheet, DVD/Video, Website, etc.)	Willing to	Product in
		share?	the PEPH
			Resource
			Center?
Material and Data Sharing	Printed Material	Yes	Yeswe will
Agreement			place it
			there
CTUIR-OSU Partnership	http://oregonstate.edu/superfund/sites/default/files/fall2011srp_ctuir.pdf	Yes	Yeswe will
Newsletter			place it
			there
Conducting research with	Journal article	Yes	Yeswe will
tribal communities:			place it
Sovereignty, ethics, and			there
data-sharing issues.			
Environmental Health			
Perspectives, 120(1), 6-10.			

University of Arizona Superfund Research Program: Hazardous Waste Risk and Remediation in the Southwest - Community Engagement and Research Translation Cores

Key Personnel (Point of Contact) and Institution:

University of Arizona Superfund Research Program:

Community Engagement Core: Denise Moreno Ramirez; Jim Field

Research Translation Core: Sarah Wilkinson; Mark Brusseau

Administration: Jay Gandolfi; Raina Maier

Brief Description:

UA SRP Community Engagement/Research Translation Cores:

- The central activity of the Community Engagement Core is to provide stakeholder outreach and education in Mexico, Arizona, the U.S.-Mexico Border region, and tribal lands.
- The central activity of the Research Translation Core is to provide dedicated interaction with state
 and federal government agencies and other stakeholders to assure that key strengths and results of
 our program are used and appreciated.
- Together, we work to:
 - o Increase public awareness, especially in economically-disadvantaged communities, of the health risks of common contaminants as well as the remediation strategies.
 - Provide appropriate and timely information that contributes to informed stakeholder decision-making.
 - Communicate to broad audiences using a variety of media, including written informational materials, web-based materials, and multi-media presentations.

Key Successes/Outcomes:

Key Outcomes of the UA SRP Community Engagement/Research Translation Cores:

- Helping affected communities to understand their risks of exposure and ways they can mitigate them.
- Providing information in Spanish to reach the Latino community.
- Empowering community health advocates via Train-the-trainer education with bilingual teaching modules.
- Encouraging behavior to decrease environmental contaminant exposure in the community and small businesses.
- Testing novel remediation technologies at Superfund sites.
- Providing information to responsible stakeholders at Superfund sites to better inform decisions on site remediation and closure strategies.
- Educating the general public.

We achieve these outcomes via:

Printed and electronic outreach materials for diverse stakeholders.

- Training modules (PowerPoint, suggested activities, instructions).
- Informational meetings focused on contaminants of concerns to the public.
- Environmental science-themed presentations targeting citizen groups and community advocates.
- Point of access to Dean Carter Binational Center and Superfund Research Program science personnel.
- SRP/EPA Region 9 quarterly seminar/webinar series focusing on topics relevant to EPA Region 9 priorities.
- Redeveloped websites that provide information about our people and projects, and allow access to downloadable materials of interest to a broad range of stakeholders.

Materials/Products Title	Format (Brochure, Factsheet,	Willing to share?	Product in the PEPH
	DVD/Video, Website, etc.)		Resource Center?
Bilingual Community Information Sheets (TCE,	tri-fold brochures; available in	yes	only TCE and arsenic
arsenic, lead, perchlorate, hazardous waste	print and via website		(?)
landfills, 1,4-dioxane, mine tailings, risk			
assessment)			
Sci Transfer research bulletins (2 on TCE; for	tri-fold bulletin; available in	yes	no
professionals)	print and via website		
www.binational.pharmacy.arizona.edu;	websites with downloadable	yes	no
www.superfund.pharmacy.arizona.edu	informational materials		
Presentations for students, professionals, and	powerpoint presentations	yes	no
community health workers			
Arizona Know Your Water (bilingual) and Arizona	booklets; available in print	yes	no
Well Owner's Guide to Water Suppy	and via website		
Environmental Toxicology (Toxicologia	textbook available for	yes	no
Ambiental - Spanish language textbook)	download on website		

Use of a Community-University Partnership to Eliminate Environmental Stressors

Key Personnel (Point of Contact) and Institution:

Dr. Sacoby Wilson, University of Maryland-College Park

Partners/Key Personnel and Institutions:

Herb Fraser-Rahim, Low Country Alliance for Model Communities
Dawn Bush, Low Country Alliance for Model Communities
Akeem Bell, Low Country Alliance for Model Communities
Dr. Edith Williams, University of South Carolina
Dayna Campbell, University of South Carolina
Hongmei Zhang, University of South Carolina
Chengsheng Jiang, University of Maryland-College Park
Dr. Erik Svendsen, Tulane University
Dr. Marjorie Aelion, UMass-Amherst

Brief Description:

We have established a community-university partnership between the Low Country Alliance for Model Communities, University of South Carolina, and the University of Maryland-College Park. For the past three years, we have been working to build capacity in the community, perform education and outreach, utilize the community-based participatory research approach, and collect data on environmental health issues relevant to underserved African-American populations in North Charleston, South Carolina. We have three primary aims: 1) Use of Geographic Information Systems to map the distribution of environmental hazards and unhealthy land uses in the Charleston MSA; 2) Assessment of air pollution levels particularly PM2.5 and PM10 and soil contamination in LAMC neighborhoods and the study area; and 3) Increase community capacity to reduce exposure, prevent pollution, and improve public health through community-based outreach, education, and training.

We have been building a database for the past year collecting information on the spatial location of hazardous waste sties, landfills, EPA regulated facilities, TRI facilities, incinerators, small polluters, and other facilities in the Charleston MSA. We have also collected information on the location of fast food restaurants, convenience stores, liquor stores, check cashing facilities, payday lenders, churches, supermarkets, grocery stores, green space, schools, banks, social service organizations, hospitals, and other resources in the community. We have been using GIS to assess spatial disparities in burden and exposure to environmental pathogens and environmental salutogens.

Members of the research team have gone through HAZWHOPER training for preparation for the assessment of soil contaminant levels particularly metals.

Key Successes/Outcomes:

We have been very successful with our environmental health research and education and outreach efforts. We have been able to train a number of residents who now have the skills to participate in community-based environmental surveillance activities. Project Excellence has been quite successful in educating residents about environmental health issues, engaging youth through the summer camp program, and building community capacity within and beyond LAMC residents, other residents in the Charleston region, and individuals in other parts of the US to help them build their capacity and skills to address environmental health and justice issues through community-driven solutions.

This partnership contributed to efforts that were part of a larger campaign to close the local incinerator located in one of the LAMC neighborhoods. This partnership has contributed to the multi-stakeholder partnership between the Low Country Alliance for Model Communities, the City of North Charleston, and the South Carolina State Ports Authority on the expansion of the Port of Charleston. This partnership has provided environmental health information that has helped inform members of this partnership on environmental health issues including members of the Mitigation Agreement Committee which has helped LAMC be empowered to work more effectively and mitigate negative impacts of port activities and port expansion and maximize the benefits. Leaders of the community-university partnership and members of the Mitigation Agreement Committee were awarded a group Environmental Justice Achievement Award from the USEPA for their collaborative efforts on addressing environmental health, mitigation, and revitalization issues important to the community. The community-university partnership established a Community University Board that has evolved into a Community Action Board that is focusing on building a broader collaboration between other communities in the Charleston region impacted by environmental health issues such as the Rosemont Community. The Community Action Board is currently employing a modified version of the EPA Environmental Justice Collaborative Problem Solving (CPS) Model to translate research into more action and solutions in the community. The Community Action Board is acting as the steering committee for the CPS structure which will include a Health and Research Team, Community Engagement Team, and and Action Team.

PEPH Program(s):

Research to Action